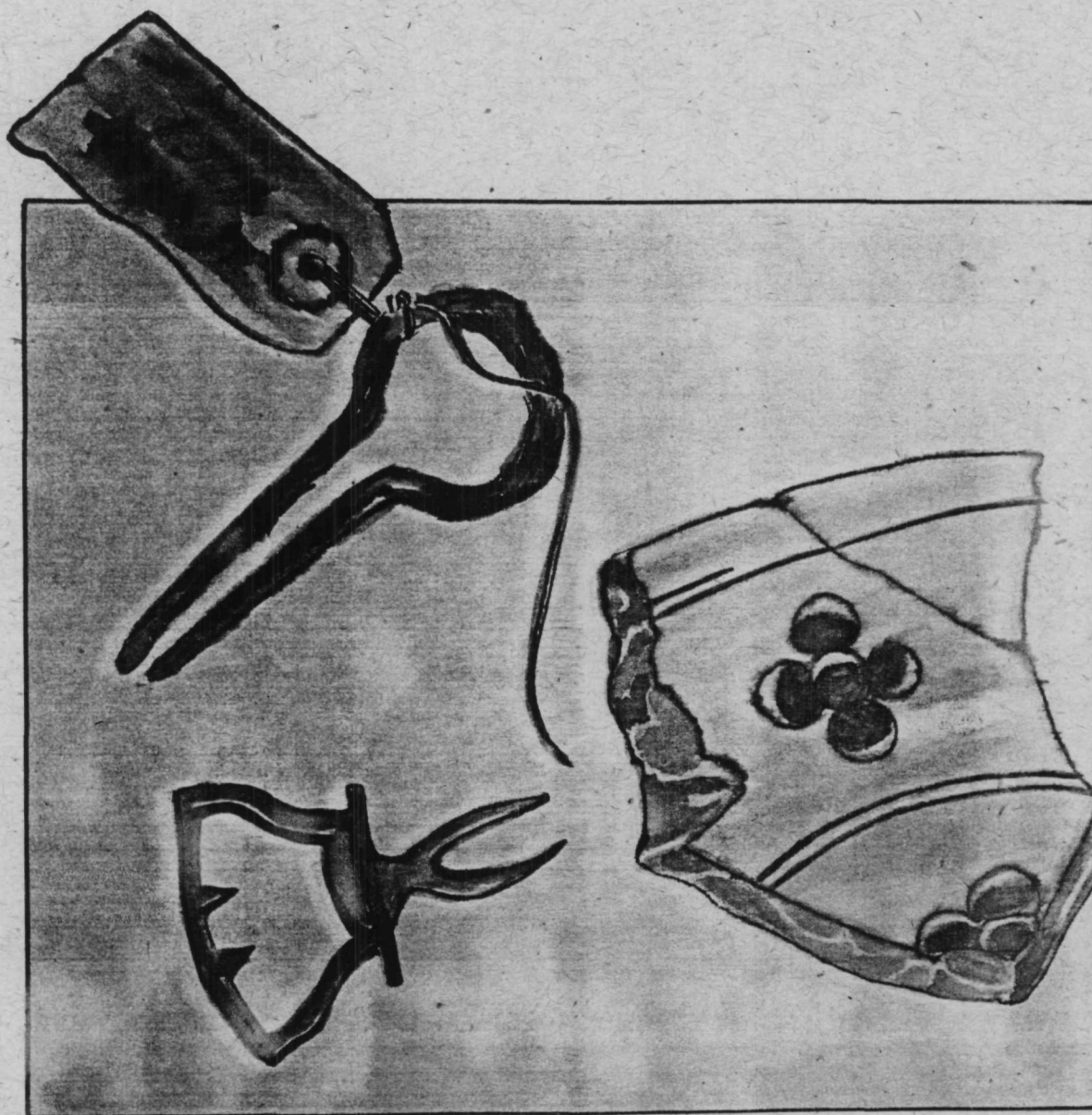


FORT FREDERICK

An Archeological Investigation
of the Southwest Bastion



FORT FREDERICK

An Archeological Investigation
of the
Southwest Bastion
and Areas Exterior to the North and West Walls

A Report Prepared for

The State of Maryland
Department of Natural Resources
Capital Programs Administration
Tawes State Office Building
Annapolis, Maryland

by

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A Map of the
State of Maryland
Showing the Location of
Washington County
and
Fort Frederick

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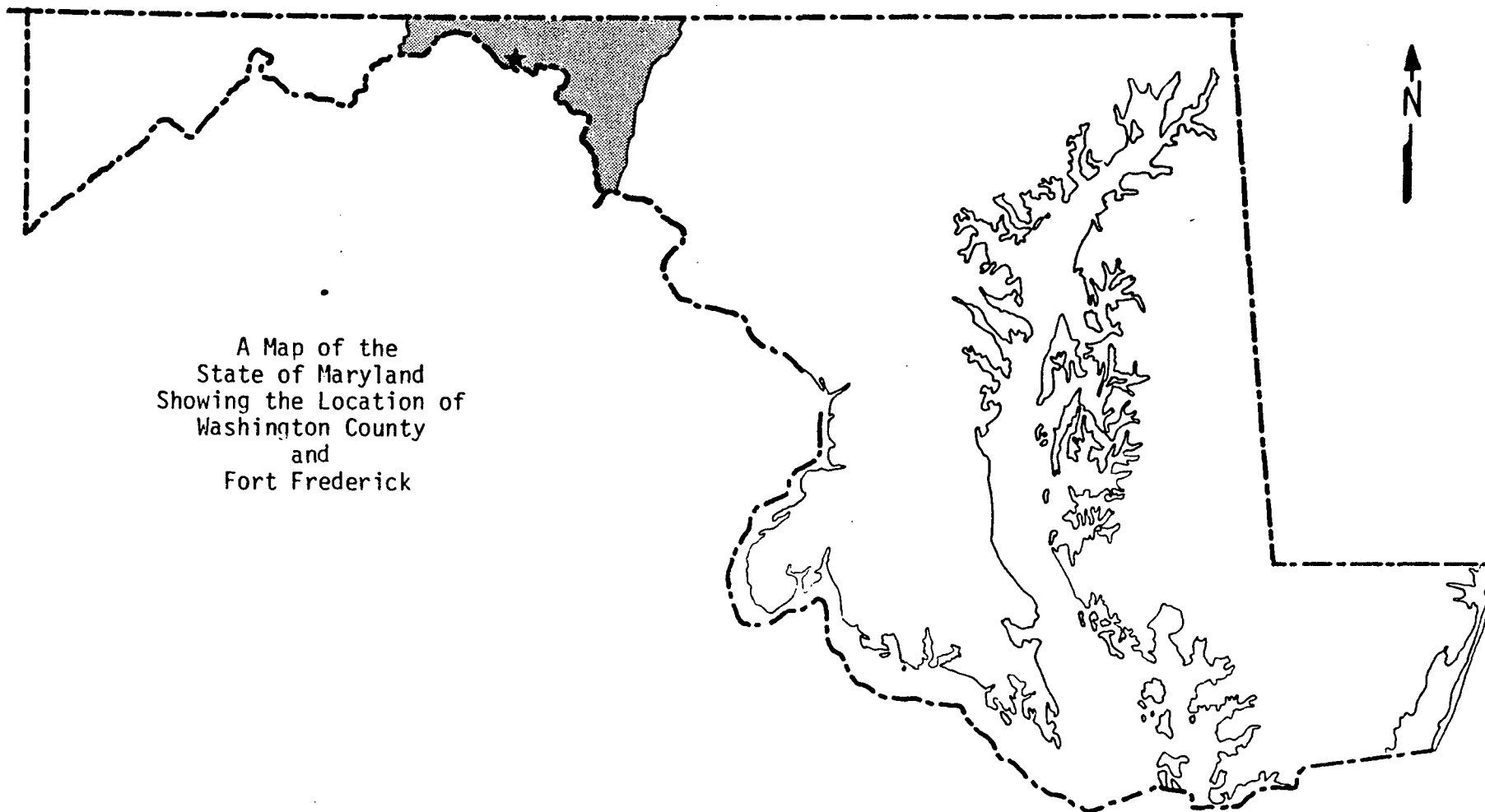
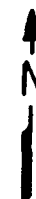


TABLE OF CONTENTS

	PAGE
1. INTRODUCTION.	1
2. SITE HISTORY.	5
3. EXCAVATION.	12
Excavation Method.	12
Strategy and Excavation.	15
A. Strategy.	15
B. Excavation.	17
(1) Southwest Bastion.	17
(2) Fort Exterior.	52
4. ARTIFACT ANALYSIS AND DESCRIPTION	64
Artifact Description	64
Artifact Analysis.	73
5. SUMMARY, INTERPRETATION AND RECOMMENDATIONS	85
Evaluation and Interpretation.	85
Recommendations.	92
BIBLIOGRAPHY.	95
PLATES	
APPENDICES	

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
Figure 1	Plan of Excavations.	2
Figure 2	Southwest Bastion Archeological Excavation Units	8
Figure 3	Profile, North Wall of Square N4E5	18
Figure 4	Profile Sheet, Square N4E4	19
Figure 5	Profile Sheet, Square N7E7	24
Figure 6	Profile, West Wall of Square N5E9.	26
Figure 7	Profile, South Wall of Square N7E5	28
Figure 8	Profile Sheet, Square N7E9	31
Figure 9	Plan of Feature 7, Square N7E9	33
Figure 10	Profile, North Wall of Square N8E8	35
Figure 11	Profile Sheet, Square N5E6	36
Figure 12	Profile Sheet, Square N4E8	41
Figure 13	Profile, North Wall of Square N4E3	43
Figure 14	Profile, South Wall of Square N5E10.	46
Figure 15	Plan of Feature 9, Square N5E10.	47
Figure 16	Profile Sheet, Square N6E10.	48
Figure 17	Profile, South Wall of Square N9E10.	50
Figure 18	Profile, North Wall of West Trench 1	55
Figure 19	Profile, North Wall of West Trench 3	58
Figure 20	Profile, North Wall of West Trench 5	60
Figure 21	Predictive Pattern Ranges for Kitchen and Arch- itecture Artifact Groups Showing the Position of Fort Frederick within the Frontier Pattern . .	80
Figure 22	Horizontal Distribution of Ceramics Within the Southwest Bastion, Layer 6	81
Figure 23	Horizontal Distribution of Nails Within the Southwest Bastion, Layer 6	82
Figure 24	Profile Section Through West Wall of Southwest Bastion, Along North 4 Transect.	89
Figure 25	Plan of Southwest Bastion Showing Extent of Shale Deposit.	91

LIST OF TABLES

TABLE NO.	TITLE	PAGE
Table 1	Artifact Class Frequencies for Southwest Bastion, Layer 6.	74
Table 2	Comparison of Artifact Class Frequencies -- Southwest Bastion and Enlisted Barracks	77
Table 3	Comparison of Artifact Group Frequencies From Three Mid-Eighteenth Century Military Sites.	78
Table 4	Application of the Mean Ceramic Date Formula to Ceramics Recovered From the Southwest Bastion, Layer 6.	83

Chapter 1

Introduction

INTRODUCTION

It is the purpose of this report to summarize the goals, methods and results of a program of archeological investigation undertaken at Fort Frederick, Big Pool, Maryland, between April 25 and June 17, 1977. This investigation was designed to augment a continuing program of restoration and development at Fort Frederick State Park and was sponsored by the Maryland Department of Natural Resources. Excavations, with Dr. Alex H. Townsend of John Milner Associates acting as Principal Investigator, were focused upon an intensive exploration of the southwest bastion, together with subsurface testing of areas outside the north and west walls of the Fort (Figure 1). Originally scheduled to conclude on June 10, 1977, funding for an addition week of excavation was provided by the Maryland Park Service in order that certain archeological features might be more fully explored.

The strategy of the investigations was designed to satisfy four primary objectives, suggested largely by lacunae in existing historical documentation:

1. Determine, through the recovery of historic structural features and artifacts, the nature of activities centered within the southwest bastion;
2. Determine, in particular, whether a powder magazine was present within the southwest bastion;
3. Determine the presence and nature of parapet construction;
4. Determine the presence and nature of exterior fortifications.

While the importance of these objectives for the development of Fort Frederick, together with historical data relevant to their satisfaction, will be outlined in Chapter Two, it should be stated here that information bearing on each of the objectives was forthcoming from the excavations.

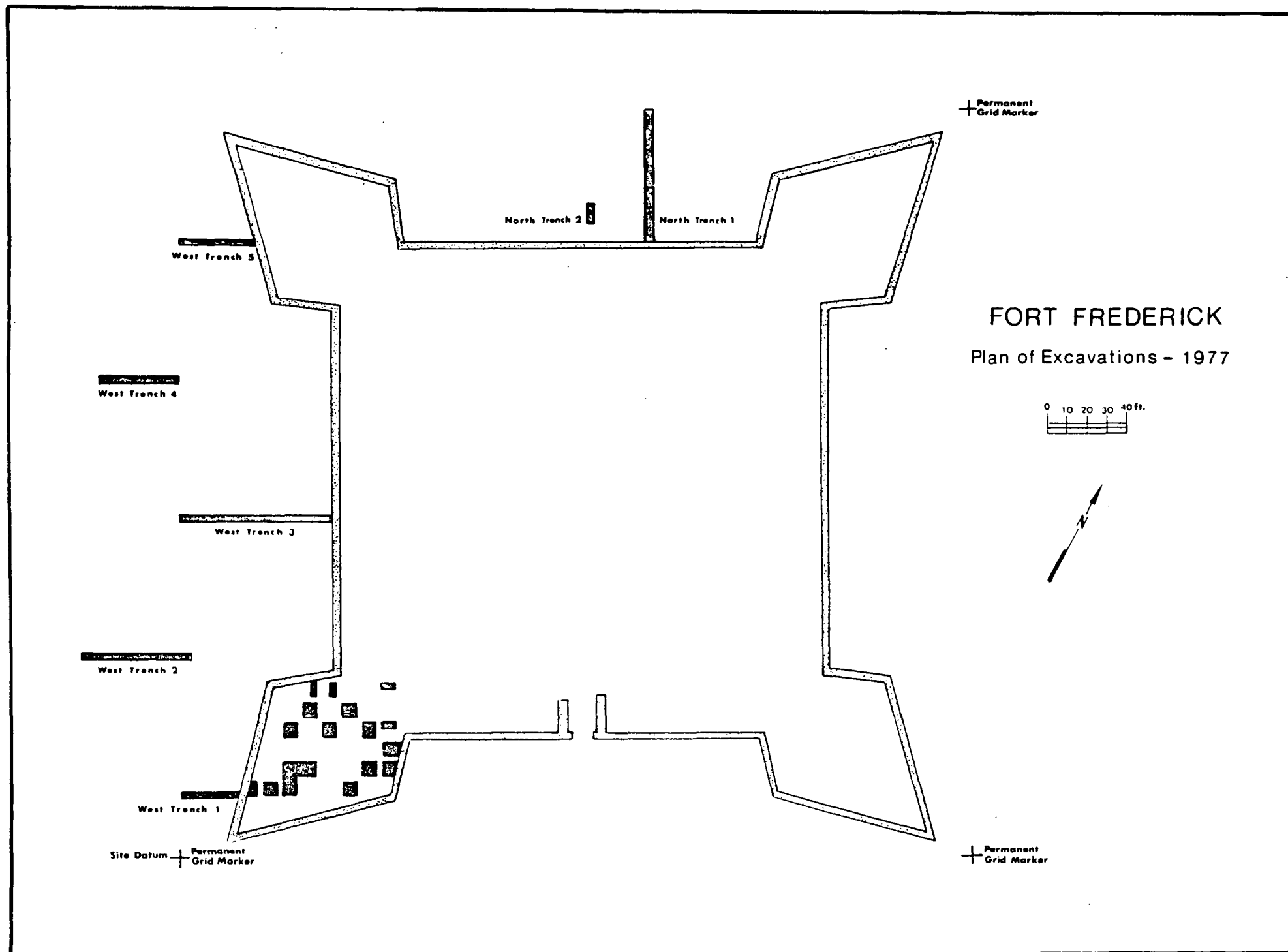


Figure 1

The 1977 investigation of Fort Frederick was the product of the efforts of a number of individuals. Daniel G. Roberts, Staff Archeologist with John Milner Associates, served as field supervisor, with the following individuals functioning as excavators: Patricia Buckley, Thomas J. Cinadr, Joan Gallagher, Lisa Gass, Virginia Harris and Kaytee Umbreit. The project was aided considerably by the interest, assistance and suggestions of Mrs. Joan Hull of Hagerstown, Maryland, and of Mr. Steven Israel, Archeologist with the Corps of Engineers, Baltimore, Maryland, both of whom contributed willingly of their time and effort.

Mr. Tyler Bastian, Maryland State Archeologist, served as project coordinator and, through many valuable suggestions and ideas, added considerably to both research strategy and results. Mr. Robert R. Bushnell, Planner with the Department of Natural Resources, was the administrative director of the project and assisted considerably in securing the necessary approval from various state offices for project design and funding. Dr. Leland Gilson, Archeologist with the Maryland Historical Trust, was also very instrumental in securing funds to support the research at Fort Frederick and further assisted the project with contributions to research design and strategy. Much of the impetus for archeological research at Fort Frederick derives from the interest and efforts of Mr. Ross Kimmel, Park Historian with the Maryland Park Service.

Additionally, the project was greatly benefitted by the cooperation of Mr. Paul Sprecher, Park Superintendant, and his entire staff. Mr. Sprecher kindly contributed storage facilities for excavation equipment, in addition to the machinery and manpower for the backfilling of all excavation units, and was very supportive of the excavation-related activities, many of which were not consonant with general park maintenance.

An analysis of a large quantity of faunal remains from a midden deposit near the center of the southwest bastion was undertaken by Ms. Linda Krakker of the University of Michigan. A summary of her analysis is appended to this

report. Dr. John E. Foss, soil scientist at the University of Maryland, visited the site and collected a number of soil samples for analysis. Excavation of a number of backhoe trenches outside the west and north walls of the Fort was conducted by Mr. Paul Mills of Big Pool, Maryland.

A preliminary version of this manuscript was submitted for critical examination by a number of reviewers and the suggestions made by those persons have aided tremendously in improving the quality of the final report. In addition to the persons mentioned above, valuable criticisms were received from Garry Wheeler Stone, Archeologist with the St. Mary's City Commission, St. Mary's City, Maryland, and from Gerald J. Sword, Park Superintendant at Point Lookout State Park, Scotland, Maryland. Miss Sarahjane Ruch deserves considerable credit for the quality of report graphics and for the cover design.

While the value of the contributions and efforts of each of these individuals cannot be overemphasized, it must be noted that any shortcomings of the project and report remain the sole responsibility of the Principal Investigator.

The present report is divided into a total of five chapters which, in addition to the introduction, include sections on site history, excavation, artifact analysis and a final chapter comprising a summary, interpretations and recommendations. Also included is an appendix on faunal analysis, a bibliography and a series of plates. Figures are enclosed within the text.



Chapter 2

Site History

SITE HISTORY

Historical documentation regarding the construction and use of Fort Frederick is frustratingly sparse. Most conspicuous among the missing documents is a plan of the fort as it would have appeared following its construction in 1756. The absence of such documentation contributes, of course, to the responsibility of the archeologist in the recovery and interpretation of data having relevance to the restoration of the fort. As will be shown in the following paragraphs, however, the documentation which has survived is sufficient to outline a set of specific problems suitable for archeological research.

Governor Horatio Sharpe was largely responsible for the effort to construct Fort Frederick and it is from his surviving letters that much of the information regarding the probable appearance and dates of construction of the fort has been recovered. As noted by Kimmel (1973:10), Sharpe had apparently seen the enlisted barracks completed along with a partial construction of remaining portions of the fort by the Fall of 1756. While work reportedly continued on the fort for a period of more than a year, the state eventually decided to cut off additional funds in support of its construction. From the 1758 journal of James Kenny, several pages of which is quoted in Bastian (1970), we know that at least three buildings stood within the walls of the fort (two enlisted barracks and one building serving the dual purpose of storehouse and officers' quarters) and reference is made also to a guardhouse. Kenny also notes the presence of a large open space in the center of the fort. In a letter from Captain Alexander Beall to Governor Sharpe, dated September 10, 1756, reference is made to "stoccades" and to the availability of thirty thousand molded bricks (Bastian 1970:4). Where the bricks were to be used is not known. It is assumed that the reference to "stoccades" indicates some sort of outwork surrounding the fort (Kimmel 1973:11).

Built to accommodate at least two hundred enlisted personnel, Fort Frederick

was no longer garrisoned by the end of 1759, but was again pressed into service as a fort and refuge during Pontiac's uprising in 1763 and, finally, as a prisoner of war camp for captured British soldiers from 1778 until about 1782. Following these brief periods of service, the fort passed into private hands and did not again become a center of public interest until about 1920, although it was occupied briefly by Union forces in 1861. Thus, despite the interest and efforts of Governor Sharpe, the construction and occupation of Fort Frederick took place only in response to immediate requirements for its use. When no such immediate need existed, the fort was either abandoned or financial support for its operations was suspended. The public use of the fort prior to 1922 probably does not exceed a period of approximately nine years.

For the greater portion of its existence the fort has been under private ownership. The northwest bastion was largely destroyed at some point in the nineteenth century to make room for a barn, and a wagon gate was cut through the north curtain wall (Bastian 1970:11). Kimmel (personal communication) has raised the point that this wagon gate may be the same opening to which Samuel Hughes, employed by the Maryland Assembly to undertake repairs at the fort, made reference in a letter of 1778, an opening which was to be sealed with a stockade. Following the deterioration of the latter, the opening would have remained. An irregular opening still present in the south curtain wall has been interpreted as having been made to permit a Union artillery piece to be trained in the direction of probable attack, but no pertinent documentation has yet been found (Bastian 1970:10).

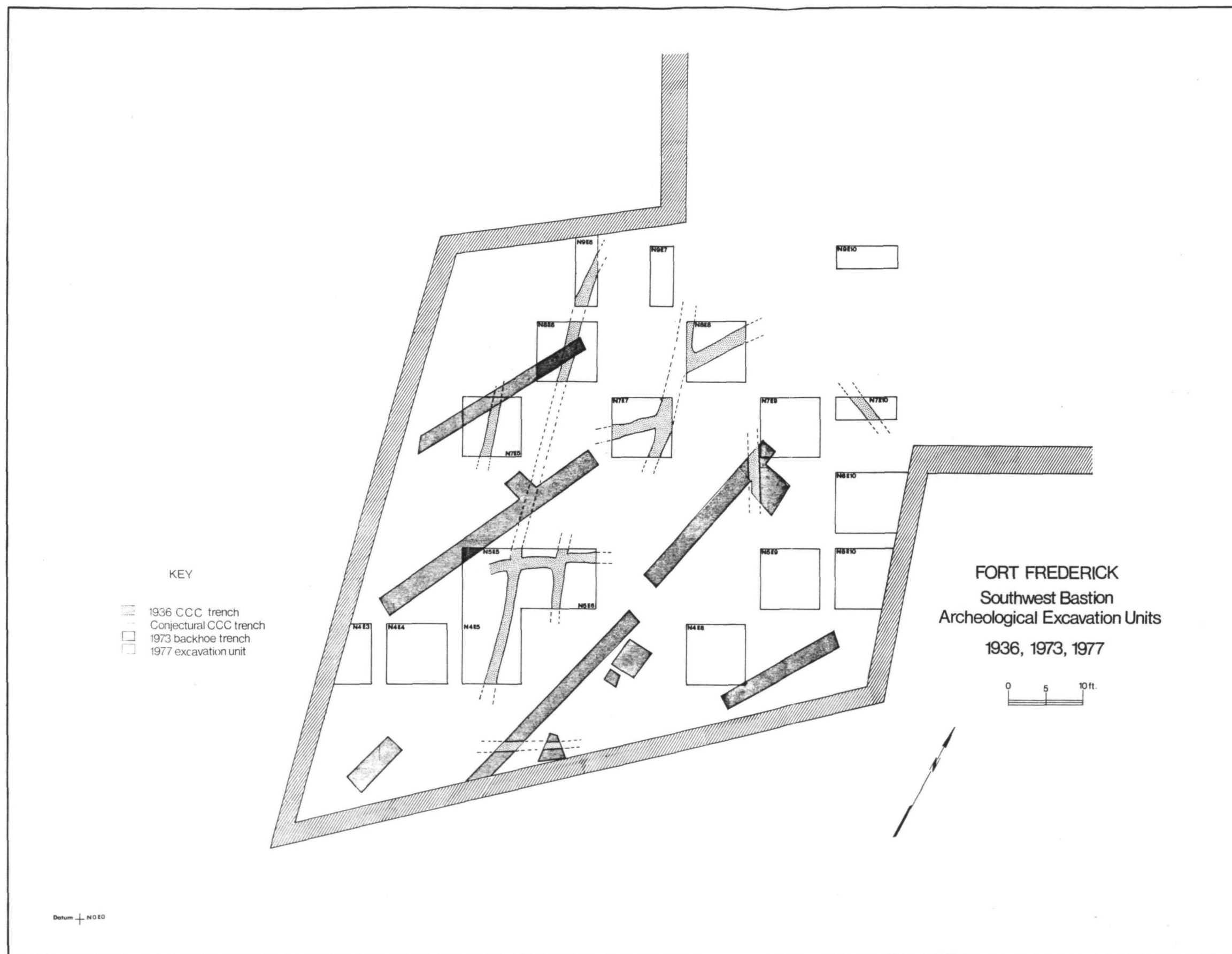
Following the acquisition of the fort by the State of Maryland in 1922 and the subsequent restoration of the fort's interior well in 1930, the Maryland State Dept. of Forestry, the Civilian Conservation Corps and the National Park Service undertook a joint effort aimed at the restoration of the fort (Bastian 1970:13). This effort also included an extensive program of archaeological excavation or, more accurately, an attempt to locate structural foundations. Little if any attention was paid to artifact collection or the

recording of non-structural features and general soil stratigraphy. The most valuable information regarding the excavations is contained in a brief progress report prepared in 1936 by Dr. Charles W. Porter, this report containing a partial list of artifacts recovered during the excavations. A few notes regarding the archeological excavations are also found on a measured drawing of the fort prepared in 1934, but the locations of excavation units are not shown. Contemporary newspaper accounts, as reported in Bastian (1970:14), maintain that topsoil within the fort was removed and sifted to an approximate depth of ten inches, accompanied by the excavation of some ten miles of trenches both inside and outside the fort.

According to notes made on the aforementioned plan of the fort, a layer of decayed wood was allegedly discovered within the southwest and northeast bastions, but artifacts (with the exception of a few nails and two cannon balls in the southwest bastion) are said not to have been found within the four bastions. This is an interesting observation in view of the large numbers of artifacts found in the fill within the CCC trenches during the 1977 excavations. It can be surmised that the stated lack of artifacts in the bastions actually reflects the absence of proper recording together with an overriding emphasis upon the recovery of structural remains. No such features were unearthed in any of the four bastions.

William Liesenbein was contracted in 1973 to undertake subsurface investigations in the southwest and northeast bastions, primarily in order to determine whether remains of a powder magazine were present in either of these locations and to determine any additional details of fort construction (Liesenbein 1975: 1). Excavations conducted within the southwest bastion were comprised of a series of seven backhoe trenches and five small squares, the former of varying length and the latter of varying size and shape (see Figure 2). Trench side walls were cleaned by hand for recording of stratigraphy. It was thus possible to record provenience data for only a limited number of artifacts found in the southwest bastion - specifically, those items recovered in hand-excavated squares and those objects which were found in the process of cleaning trench walls

Figure 2



for profiling.

The excavations conducted by Liesenbein were successful in showing the rather complex stratigraphy within the southwest bastion, but an accurate interpretation and correlation of the various deposits was not possible with the limited data available (Liesenbein 1975:82). A major effort was thus made during the 1977 field season to accurately correlate the deposits in all excavated units and place these within a relative temporal sequence of deposition. Results of the 1973 investigations of the southwest bastion were conjectural, however, especially in regard to the presence or absence of remains of a powder magazine. While some sub-surface irregularities or anomalies were noted, clear evidence of structural features was lacking.

In an attempt to determine the presence and location of surface indications of possible historic features a photoarcheological study of the fort and surrounding area was carried out by Mr. Carl H. Strandberg during the spring and early summer months of 1974. While clear-cut indications of fort-related features were not apparent in the resulting photographs, a number of anomalies were noted and marked for eventual sub-surface investigation. One such anomaly appears as a dark zone paralleling the north exterior wall of the northeast bastion and exterior testing was undertaken as a part of the 1977 investigations to determine whether this anomaly was related to outer defense works at the fort. No distinct surface anomalies were visible within any of the bastions.

Additional excavations at Fort Frederick were carried out in the Spring of 1974 on the sites of the east and west barrack foundations by Mr. Stephen Israel. Although the results of this work do not have a critical bearing upon the excavations conducted within the southwest bastion, interesting comparisons were made between numbers and types of artifacts recovered in the two areas.

Through a careful analysis of historical documentation concerning Fort Frederick, together with a comparison of Fort Frederick with records of contemporary forts and the art of fortification, Kimmel (1973:15ff) has

raised several problems and postulated a number of corresponding hypotheses relative to its original appearance. The first such problem is that of the manner of construction and original appearance of the stone walls which form the curtains and enclose the bastions. The interpretation formulated during reconstruction in the 1930's holds that the curtain walls were free-standing with wooden cat-walks or parapets running along their interior from bastion to bastion. The latter were thought to have been filled with earth to parapet level. Kimmel (1973:19), however, who bases his interpretation largely upon the contemporary art of fortification together with evidence of possible joist pockets along the interior of the curtain walls, feels that the stone was but a facing for a wall of earth measuring approximately sixteen feet thick. The inner face of this wall is thought to have been constructed of wood and connected with the stone wall by means of tie beams to effect a measure of stability. This interpretation also finds some support in historical documentation through mention of the fact that the bastions and curtains were faced with a stone wall (Kimmel 1973:18). At any rate, one of the primary objectives of the 1977 investigations thus became the determination of the nature of parapet construction within the southwest bastion.

A second problem discussed by Kimmel (1973:21ff) is that of the number and locations of the magazine(s). While one document contains a plural reference to such structures, a more reliable note in a communication authored by Governor Sharpe mentions only a single magazine. Neither reference provides any suggestion as to location but, as Kimmel (1973:21) points out, magazines in contemporary forts are almost invariably found within the comparatively well protected bastions. A notation on the plan of the fort prepared in the 1930's that decayed wood and shale were found archeologically in the southwest and northeast bastions has led to speculation that one or both of these areas may have been the site of a magazine. A second objective was thus defined for the 1977 investigations.

Another major goal of the 1977 field season was, as mentioned earlier, the determination of the presence and nature of any outer fortifications. This problem arose from a comparison of Fort Frederick with contemporary forts since, as Kimmel (1973:23) notes, "every fort in the King's Maps the size of or larger than Fort Frederick had outworks." A single historical reference to the construction of "stocades" is the only support forthcoming from the documentary record for the presence of such features. According to the contemporary art of eighteenth century fortification, however, a fort the size of Fort Frederick would ideally have been surrounded by a complex of earth works, the principal components of which would have been a glacis, or outer slope, and an inner ditch. The presence of such works should, as Kimmel (1973:25) notes, be readily discernible through archeological excavation.

As outlined in the introduction to this report, and in the preceding paragraphs, the problems arising from a careful study of historical records served to focus attention upon the satisfaction of a specific set of goals dealing with the probable appearance of the southwest bastion and exterior areas upon completion of the fort in 1756 or 1757. The fact that the fort may never have been fully completed at all (at least in accordance with Governor Sharpe's original plans) may have a bearing in the explanation of the nature of the features which were subsequently unearthed. The manner in which an attempt was made to satisfy project goals through subsurface investigation is detailed in the following chapter.

Chapter 3

Excavation

EXCAVATION

The present chapter is subdivided into two sections, one dealing with the methods of investigation and the other with excavation strategy. A consideration of method is the first of these sections to be presented and is largely concerned with a description of those practical regularities of day-to-day organizational procedure which were adopted and followed throughout the investigation of the site. Strategy, on the other hand, is considered to be a continuous process involving the ways in which those methods and techniques employed are adapted and utilized in pursuit of the solution of specific problems which form the focus of any archeological excavation. It must be emphasized, however, that this process of adapting method and technique to problem solution involves constant feedback stemming from observations made during the course of the excavation, modification of excavation goals, etc., which results in occasional changes in method. It is the pursuit of problem solution, and the manner in which methods and techniques are employed in that pursuit, which provides a standard by which archeological investigations may be evaluated.

Excavation Method

Prior to the start of excavation, a decision was made to divide the site into units of equal size, units which would facilitate the horizontal and vertical recording of recovered information. The division of the site in such a manner is consistent with standard archeological procedure, and the excavation of units of identical size allows the comparative and quantitative analysis of artifacts and features in different areas of the site. The specific grid system desired was one which would not only allow the excavation of units of equal size, but which would lend itself to alternative strategies. That is, a grid system was desired which would allow not only the excavation of individual units, but a system which would also, for example, permit the excavation of elongated trenches as well, should such a strategy be adopted. An additional consideration, one which is closely related to the accommodation of alternative strategies, was a need for a grid system capable

of infinite expansion in any given direction. This was a critical consideration in view of the fact that the grid system employed during the 1977 investigations is intended to be employed during any and all subsequent Fort Frederick excavations as well. Most important, a system was required which would minimize any possible confusion in excavation unit designations. Finally, it was necessary that individual units be of a size sufficient to facilitate the functional identification of recovered features.

The type of grid system which best satisfies the requirements outlined above, together with a requirement for overall simplicity, is a system commonly referred to as the NØEØ system, in this case comprised of units measuring ten feet on a side. As a matter of convenience the grid system is aligned as closely as possible with the curtain walls of the fort, the interior of the north curtain wall lying along one transect of the grid. A point lying outside the southwest bastion was selected as an overall site datum, designated North Zero/East Zero or, simply, NØEØ, thus placing the entire fort within a single grid quadrant - - north and east of datum (Figure 2). Each individual ten foot square unit is designated in accordance with the direction and unit distance of its northwest corner from the site datum. That is, a square having as its northwest corner a point lying forty feet north and fifty feet east of datum would be designated N4E5 (four units north and five units east of datum). The site datum is also employed as a basis for vertical measurements, representing an arbitrary zero elevation. Thus, all elevations taken during the course of the investigation are recorded as measurements in inches above or below the site datum.

To facilitate the accurate employment of the grid system in future excavations, a decision was made to establish a number of permanent markers, both outside and within the walls of the fort, on various grid intersects. Initially, it was decided that two markers would be established on the interior walls of the fort, one each on the north and west curtain walls, and two markers planted outside the fort. Due to variations in the walls of the fort and deviations from the lines of the grid, however, only one marker was set inside the fort

(in the west curtain wall near the southwest bastion), while three markers were set outside the fort - outside the southwest, southeast and northeast bastions.

The exterior markers are standard brass-capped concrete benchmarks, set flush with the surface of the ground, the marker located outside the southwest bastion serving as the site datum (see Figure 2). It is strongly recommended that units selected for future excavation be located on the basis of measurements utilizing the permanent exterior grid markers rather than the interior marker.

In order to maintain a careful vertical and horizontal control of excavated strata and features, a balk one foot wide was maintained within the perimeter of each excavated square, resulting in an actual measurement for excavation units of eight feet on a side. Excavated soil was removed in natural or 'cultural' layers and was sifted through quarter inch wire mesh screens. Layers thought to be either heavily disturbed or of recent origin (i.e., deposited after 1934) were carefully removed by shovel, but remaining deposits, especially those thought to be of eighteenth century origin, were carefully excavated with the use of trowels. Without the use of the screens much material would have been lost, especially such items as small sherds, buttons and coins.

Strata distinguished during excavation were numbered serially from topsoil to subsoil within each excavated unit. Profile drawings were made and photographs taken of all four sections within each square, a thoroughness thought necessary because of the slope and complexity of excavated strata. All layers distinguished during excavation were subsequently correlated from unit to unit and a single system of layer designations was compiled with the use of the Harris matrix (see Harris 1975). This matrix represents a technique for chronologically ordering excavated strata and associated features, but its principal value lies in its use as an heuristic device which forces the investigator to correlate and arrange strata and features from separate excavation units within a single chronological sequence. Plan views and measurements were also recorded

for the surface of each excavated layer on forms prepared for this purpose. Features discovered during the course of the excavation were numbered serially regardless of the unit within which they were found, each numbered feature measured and drawn on prepared forms.

Excavated artifacts were bagged according to the specific layer within which they were found and an inventory of all recovered materials was subsequently prepared.

Finally, the excavation director maintained a daily log in which was recorded the day-to-day progress of the investigations, observations, interpretations and ideas regarding excavation strategy. The last mentioned topic forms the subject of the second section of the present chapter, but it is not possible to discuss strategy apart from a description of the actual excavations and the development of interpretations based upon the observation thereof.

Strategy and Excavation

A. Strategy

As indicated at the beginning of this chapter, excavation strategy is considered here as the manner in which archeological methods and techniques are employed in and adapted to the pursuit of the satisfaction of project goals. At the risk of redundancy, the primary goals which comprised the focus of the investigations at Fort Frederick are the following:

1. Determine the nature of any activities centered within the southwest bastion during the historic occupation of the fort;
2. Determine, in particular, whether a powder magazine was present within the southwest bastion;
3. Determine the presence and nature of parapet construction;
4. Determine the presence and nature of any exterior fortifications.

Each of these goals required the application of a particular excavation strategy. A determination of the types of activities centered within the bastion, for example, required that as much of the subject area be sampled as possible. That is, it was necessary that excavation units be dispersed over all areas of the bastion and that any one particular area not be exhaustively investigated at the expense of another. At the same time, the satisfaction of this goal required that excavation units be of a size sufficient to allow the recovery of archeological features and that a concomitant emphasis be placed upon the careful and systematic recovery of artifacts. The latter two requirements rested upon the conviction that both features and artifacts are of extreme importance in the generation of functional interpretations.

In order to determine the nature of parapet construction, it was necessary to focus attention upon the interpretation of stratigraphic profiles cut approximately perpendicular to the interior walls of the bastion as well as upon a careful examination of soil layer surfaces in those units excavated near the bastion periphery. Artifacts were considered of less importance than evidence derived from profiles and plans, although the presence of charred wood and hardware might prove informative.

Subsurface investigations outside the walls of the fort, designed to unearth evidence of exterior fortifications, presented a considerable strategical problem due to the extent of the area to be sampled. Limitations of time and manpower effectively precluded the efficient testing of subject areas through hand excavation techniques. Accordingly, a decision was made to excavate a series of backhoe trenches perpendicular to the west and north walls of the fort in the hope that one or more of these trenches would cut across a line of outer fortification, either an outer slope, inner ditch or palisade. While the careful examination and interpretation of resultant soil profiles is of critical importance in the search for such evidence, careful artifact collection is of secondary concern. Given this emphasis

upon soil profiles, together with practical limitations of time and personnel, the use of a backhoe for exterior excavations thus became the only acceptable alternative.

B. Excavation

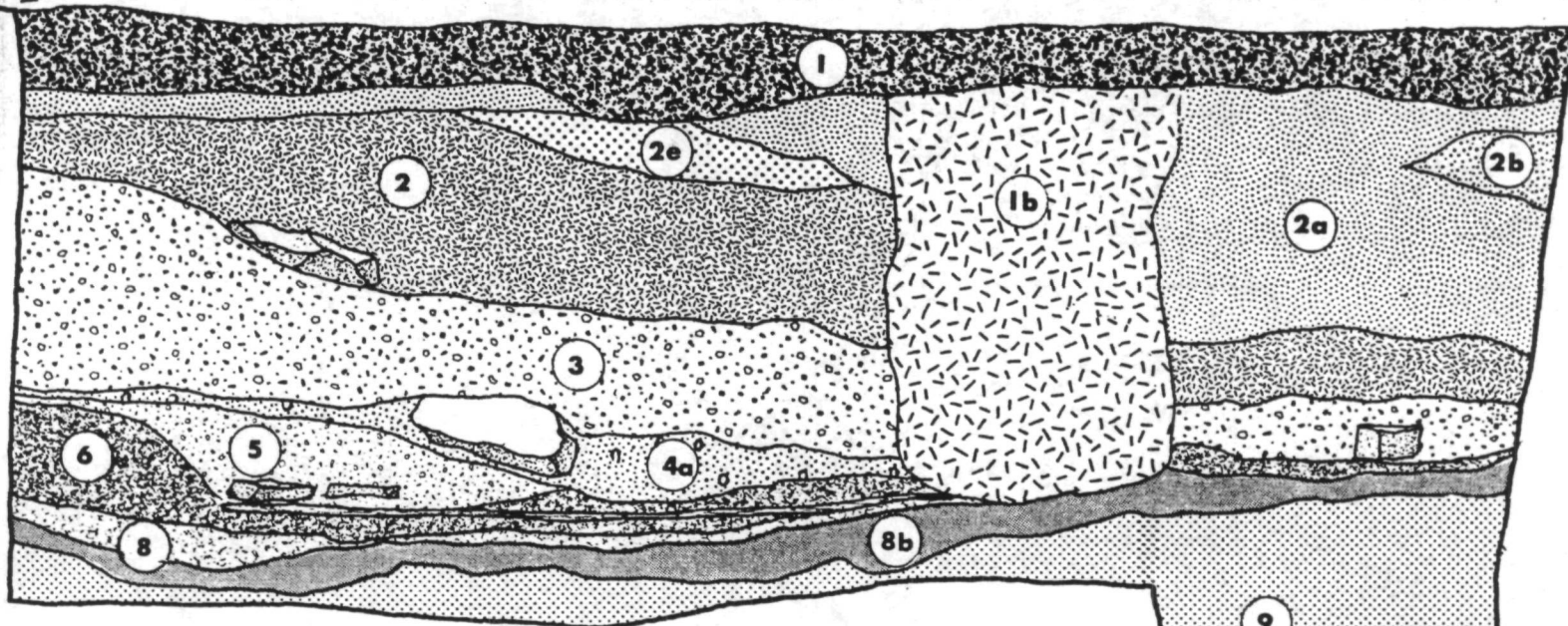
(1) Southwest Bastion

Subsurface investigations at Fort Frederick were begun with the excavation of two adjacent squares, N4E4 and N4E5 (see Figure 2 and Plate 1), these units selected partly on the basis of the absence of backhoe disturbance. While the excavation of two adjacent units may seem inconsistent with the stated strategy for sampling as wide an area of the bastion as possible, it was felt that the excavation of a single isolated unit might result in misleading initial interpretations. The stratigraphic complexity encountered in these two units (see Figures 3 and 4) made their concomitant excavation extremely valuable.

Easily the most important observation arising from the excavation of these two units concerned the downward sloping of principal strata toward the center of the bastion (Plate 2). This sloping was found to characterize most of the strata excavated in all squares located around the bastion periphery. One very frustrating aspect of the excavation of these two units, however, was the almost complete absence of artifactual material in all but the layer of post-1936 topsoil. It was not until the removal of the last remaining portions of layer 6 in the northwest and northeast corners of units N4E5 and N4E4, respectively, that a few artifacts of eighteenth century origin were discovered. The recovery of these few items was significant in allowing an initial interpretation of layer 6 as an essentially undisturbed cultural deposit dating to the mid-eighteenth century. It was not possible, obviously, to determine on the basis of only a few artifacts whether layer 6 was deposited during the initial occupation of Fort Frederick or during its subsequent utilization as a prisoner of war camp.

Square N4E5
North Face
Scale: 1"=1'

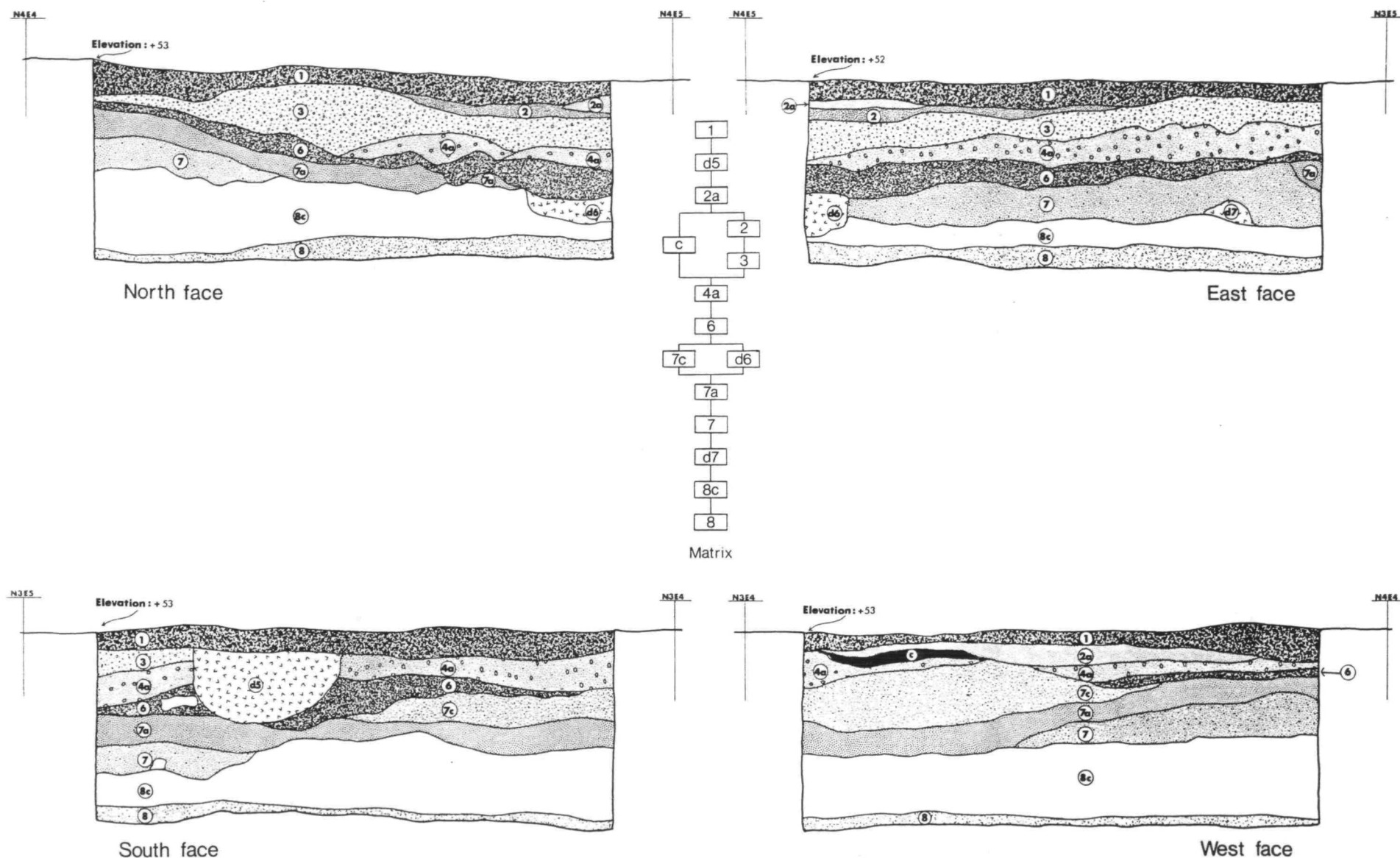
Elevation: + 57



- | | | | |
|----|----------------|----|-----------------------------------|
| 1 | topsoil | 4a | post 1758 fill |
| 1b | trench | 5 | post 1758 fill |
| 2 | shale | 6 | occupational deposit c. 1756-1758 |
| 2a | erosional fill | 8 | 1756 humus |
| 2b | erosional fill | 8b | pre-occupational humus |
| 2e | erosional fill | 9 | sterile subsoil |
| 3 | post 1758 fill | | board |

Figure 3

Figure 4



On the basis of the stratigraphic position of a CCC trench which cut through square N4E5 (Figure 3), it is apparent that the strata lying between layer 6 and layer 1 (topsoil) had been deposited prior to the initiation of the CCC investigations in the 1930's. The total absence of artifactual material in these layers, however, obviates a determination of date of deposition, relative to layers 1 and 6. A thin lens of organic soil lying immediately above sterile subsoil was interpreted as the existing surface at the time of fort construction, and the excavation of subsequent units did not alter this judgment.

Of significant importance to subsequent interpretations regarding the original appearance of the southwest bastion was the presence of a deposit of apparently sterile fill separating layer 6 from the original humus. This sterile fill increased in thickness in both squares with increasing distance from the center of the bastion. In other words, it appeared that this layer of fill, deposited prior to the accumulation of layer 6, increased in thickness toward the periphery of the bastion. This immediately suggested that the elevation of the ground surface within the southwest bastion was, during the initial period of occupation, higher around the periphery than in the center. Subsequent excavation supported this interpretation.

Of further importance to an interpretation of the early appearance of the southwest bastion was the presence of a deposit of shale in both of these units, N4E4 and N4E5, clearly deposited subsequent to the accumulation of layer 6, but prior to the initiation of CCC investigations. The significance of this deposit was not fully appreciated during the excavation of these first units, but the occurrence of shale in subsequent units forced an awareness of the potential importance of this layer in the formulation of interpretations regarding the eighteenth century appearance of the southwest bastion.

The occurrence of brick rubble in the layers immediately beneath the shale, especially in layers 3 and 4a, suggested the presence of structural features within the bastion, although nothing in this regard was found in the two

squares in question. An elongated fragment of a charred or carbonized board, protruding from the north face of N4E5 in layer 6, was the only other suggestion of the possible presence of structural features. A careful examination of the surface of each successively excavated layer failed to reveal the presence of post molds or other such features usually encountered during the excavation of historic sites.

While it may be argued that the initial complexity encountered in squares N4E5 and N4E4 was unfortunate, the presence of most of the principal southwest bastion deposits in these initial units was probably beneficial to the development of excavation strategy. That is, this apparent complexity allowed an early formulation of testable hypotheses or interpretations regarding the past appearance of the bastion.

In sum, a total of more than fifteen layers was recorded in these first excavated squares, most of these deposits sloping markedly toward the center of the bastion (see Figures 3 and 4). A listing of all excavated layers is provided in Appendix A, a list which provides, in most cases, a Munsell color reading, a note as to soil texture and inclusions, and a preliminary interpretation regarding the origin of the deposit. The initial interpretations which were made on the basis of the nature and configuration of these layers required, for their refinement, corroboration or rejection, that additional selected units be excavated in various portions of the bastion. It was necessary, first, to excavate a square near the center of the bastion in order to determine further the approximate date and nature of deposition of layer 6. Second, it was necessary that some determination be made regarding layer 8, tentatively interpreted as the original humus layer at the time construction was begun on Fort Frederick. Specifically, a question existed regarding the possible nature of layer 8 as an occupational surface prior to the deposition of sterile fill (layers 7, 7a, 7c and 8c) around the periphery of the bastion. These two problems alone required the excavation of at least two additional units, one near the periphery of the bastion and one near its center. A further question existed regarding the function of the shale deposit (layer 2), which

appeared to require the excavation of units which would allow an investigation of the transitional zone from the peripheral to the central area of the bastion.

Following completion of the units described above, then, the excavation of three squares -- N7E7, N7E5 and N5E9 -- was begun simultaneously, assigning two persons to the investigation of each unit (Figure 2). Squares N7E5 and N5E9 were selected in order to further examine the interface between peripheral and central areas of the bastion, while the excavation of square N7E7 was expected to yield significant data regarding both the approximate date of deposition of layer 6 and the early configuration of the central portion of the bastion. An effort was made in the selection of these units to avoid areas heavily disturbed by the backhoe excavations conducted in 1973.

Square N7E7, the first unit to be excavated in the central area of the bastion, revealed a stratigraphic sequence considerably less complex than that observed in the units described above. As illustrated in Figure 5 and Plate 3, two layers of topsoil were noted in this unit, designated layers 1a and 1, the first of these thought to represent spoil dirt remaining from the 1973 backhoe excavations. These two deposits reach a depth of approximately one foot at the southeast corner of the unit. Lying beneath the topsoil in N7E7 is an accumulation of light brown soil of a comparatively fine texture (layer 2a) which initially gave rise to a considerable amount of concern regarding its interpretation. This concern was due to the presence of a large amount of stone rubble strewn throughout the deposit, together with a number of artifacts of eighteenth century origin. As these stones and the seemingly associated artifacts began to appear, considerable efforts were made to detect any indications of form or patterning which might be present in the spatial distribution of the stones, but careful excavation revealed no such regularities. Rather, with continued removal of soil it became increasingly apparent that the stones represented merely a randomly strewn concentration of rubble. Moreover, the recovery of a corroded tin can of recent appearance, found within the rubble, suggested a twentieth century date of deposition, specifically during the 1930's. This

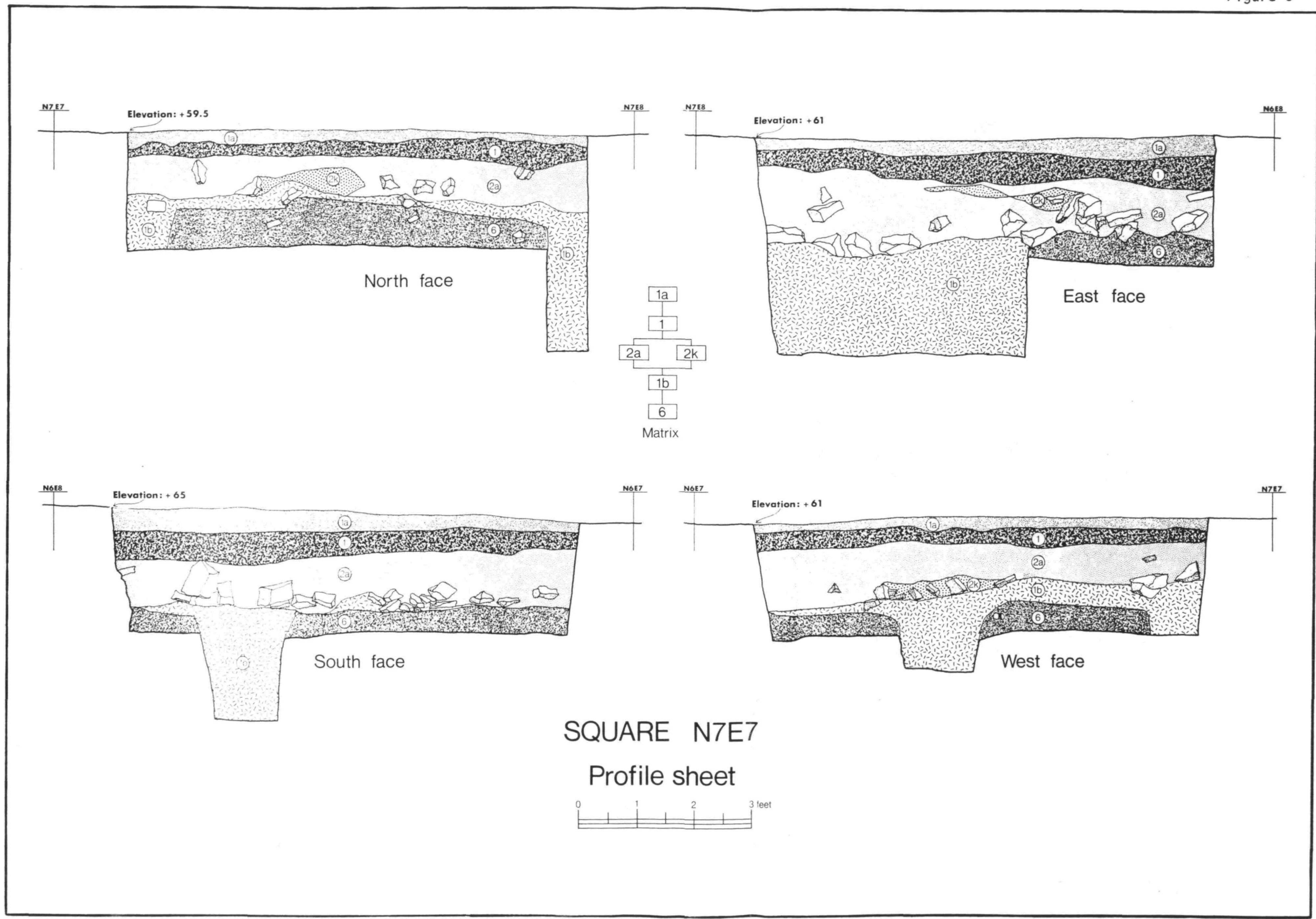
interpretation was easily confirmed when the removal of layer 2a revealed the presence of two clearly defined CCC trenches. This sequence is illustrated in Figure 5.

Although partially covered by spoil dirt from the excavation of the CCC trenches, a largely undisturbed deposit of organic soil lay beneath the accumulation of soil and rubble described above. This deposit is identical to that found in squares N4E5 and N4E4 and labeled layer 6 -- that is, the soil is dark brown and organic in appearance and contains artifactual material attributable to a mid-eighteenth century origin. Accordingly, this deposit was also given the designation of layer 6, albeit on a tentative basis. The principal distinction between layer 6 as noted in square N4E5 and in N7E7 was the presence in the latter of a rather large quantity of faunal material, much of it identifiable as cow and pig. As will be discussed at greater length in the chapter to follow, it is significant that of the artifactual material recovered from layer 6, none of the individual items suggest a date of deposition later than the initial occupation of the fort.

Removal of layer 6 (following a re-excavation of the CCC trenches) revealed only the surface of a sterile subsoil -- layer 9 -- a careful cleaning of which failed to produce indications of post holes or other such structural features. The excavation of square N7E7 thus indicated an open area in the center of the bastion, level with but at a lower elevation than the contemporary surface near the bastion periphery.

Square N5E9, on the other hand, revealed a stratigraphic sequence differing markedly with that observed in N7E7. As illustrated in Figure 6, this unit contained strata previously observed in squares N4E4 and N4E5, but lacking much of the complexity which characterized the latter. The light brown and finely textured soil (layer 2a) encountered in both N4E5 and N7E7 was found over most of this unit, lying immediately beneath a comparatively uniform humic topsoil (layer 1). As was the case in N7E7, this deposit contained

Figure 5



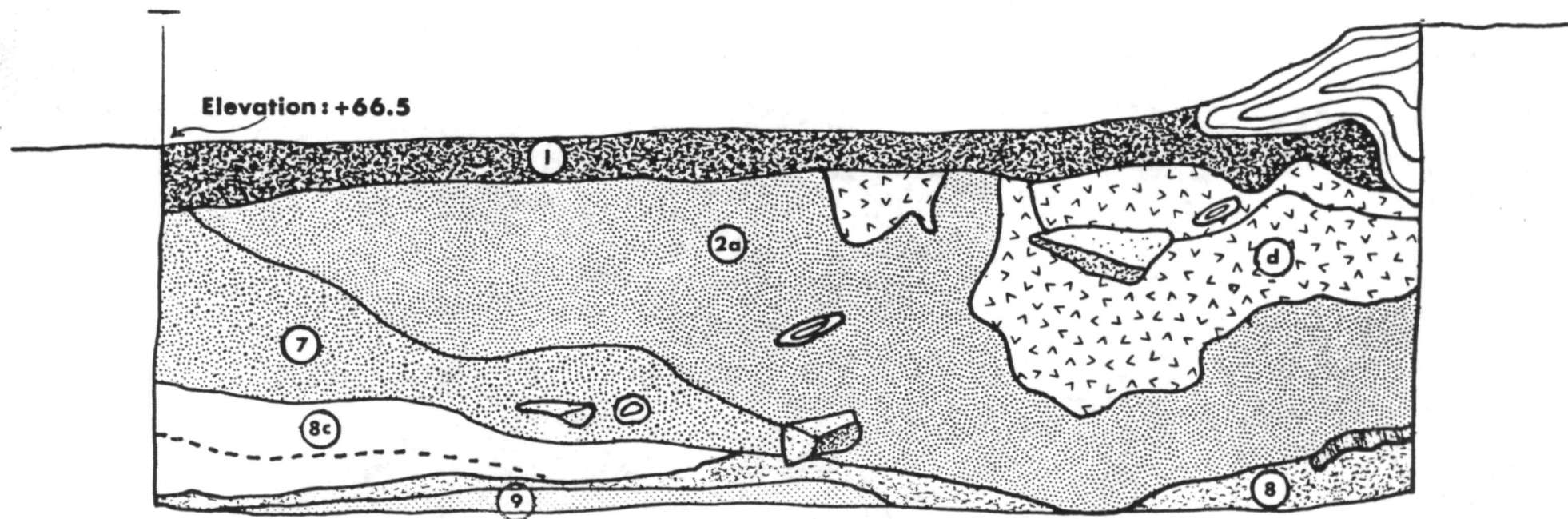
a few artifacts, all of eighteenth century origin, together with stone rubble. In this case, however, the rubble was comprised of only a light scattering of stones. Stratigraphic interpretation was made complex by the presence of a large tree stump and attendant roots centered in the northwest corner of the square.

Lying just beneath layer 2a over most of the area of the square was a deposit of brown sandy clay soil completely devoid of artifactual content. As may be seen in Figure 6, this layer (designated layer 7) sloped sharply downward toward the center of the bastion. Of very similar appearance and texture, but yellowish brown in color was the underlying deposit (layer 8c), also sloping sharply toward the central area of the bastion. Like layer 7, layer 8c did not yield artifactual materials.

The only significant exception to the sequence described thus far occurred along the north edge of the square with the presence of a deposit of shale immediately beneath layer 2a (as was the case in square N4E5) and overlying a layer of light brown soil designated as layer 3a (a small amount of which was, again, found beneath the shale in N4E5). Neither the shale (layer 2) nor this underlying layer yielded artifactual materials.

Layer 8, previously interpreted as the original humus layer predating the construction of Fort Frederick, was found over the entire area of the square underlying, for the most part, layer 8c. (Along the north edge of the square it was found directly beneath layer 3a.) Two fragments of charred or carbonized boards were found lying directly on the surface of layer 8, one in the northeast corner and the other along the north face of the square. In neither case were artifacts found in association with the wood, nor were artifacts recovered in any portion of layer 8. Underlying layer 8, as elsewhere, was a tan subsoil of a hard-packed sandy nature. As a precautionary effort, a small section of subsoil was removed in the northeast corner of the square to a depth of an additional twelve inches, this in order to ensure

Square N5E9
West Wall
Scale: 1"=1'



MATRIX



KEY

- | | | |
|----|--|-----------------------------|
| 1 | | topsoil |
| 2a | | light brown sandy soil |
| 7 | | sterile fill above layer 8c |
| 8 | | grey humus, pre-1856 |
| 8c | | yellowish brown soil |
| 9 | | sterile subsoil |
| d | | disturbed soil |
| | | charred wood fragments |

Figure 6

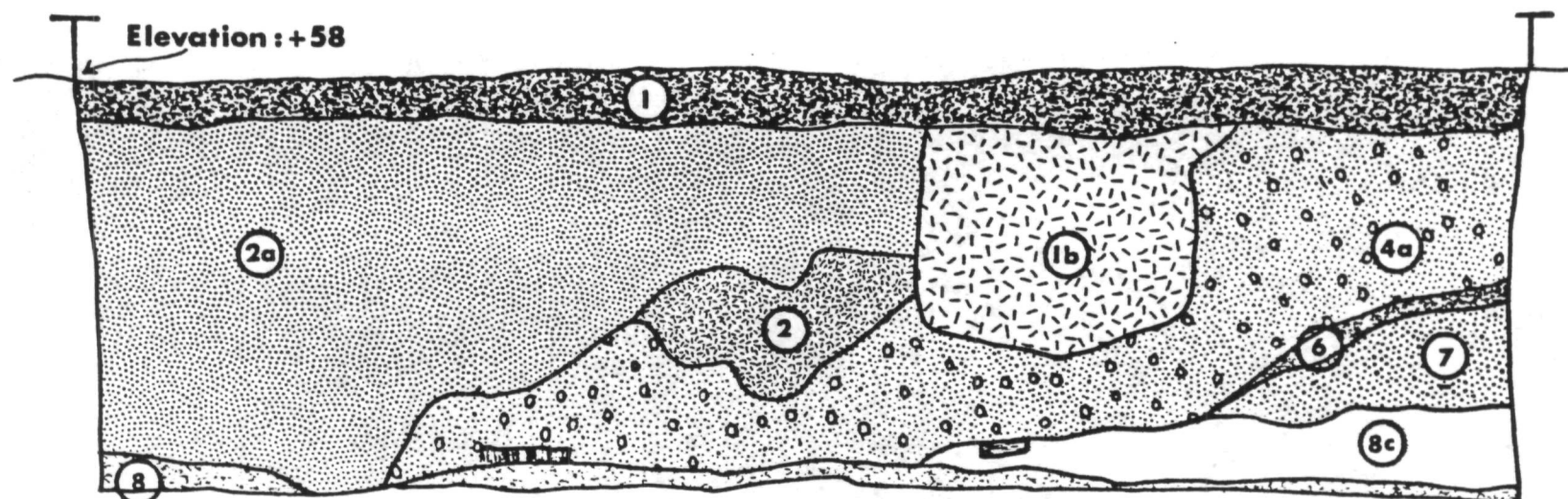
that all culturally deposited strata had been removed. Once again, a careful examination of the surface of the subsoil (designated as layer 9) failed to reveal any trace of post holes or other such structural features.

One disturbing aspect of the excavation of square N5E9 was the failure to detect the presence of any deposit which might be correlated with layer 6, the eighteenth century artifact-bearing deposit found in the units previously discussed. A careful examination of recorded profiles and excavation notes suggests the possibility that layer 6 may simply have been extremely thin in this area of the bastion and may have blended somewhat with layer 8 which is of similar appearance. The presence of the charred or carbonized wood fragments mentioned above strengthen this interpretation, as such fragments were associated with layer 6 in square N4E5.

The excavation of square N7E5, located in a position analogous to that of N5E9 but on the west side of the bastion (see Figure 2), revealed a stratigraphic sequence and configuration mirroring that encountered in the latter unit. As in N5E9, a rather thick deposit of what has been designated layer 2a was found to extend over much of the square beneath a layer of humic topsoil. While the northwest corner of the square was entirely disturbed by 1973 backhoe excavation (Figure 2), this disturbance was a minimal impediment to interpretation. A second disturbance was present in the form of a narrow CCC trench running across the unit from north to south, again presenting few problems for interpretation.

A narrow band of shale was found to stretch from the center of the south face of the square to the center of the east face, overlying layers 3 and 4a (Figure 7). The principal difference between these two layers is the presence of a large amount of brick rubble in layer 3, with layer 4a being comprised of an orange-brown clayey sand. Whereas layer 3 occurs only in a small area immediately beneath the shale on the east side of the square, layer 4a is found over the entire unit. Artifactual material was not found in either of these deposits, nor in the shale.

Square N7E5
South Wall
Scale: 1"=1'



KEY

- 1 topsoil
- 1b CCC trench
- 2 shale
- 2a light brown sandy soil
- 4a light yellow brown with brick fragments

- 6 grey-brown cultural deposit
- 7 sterile fill above layer 8c
- 8 grey humus, pre-1856
- 8c yellowish brown soil
- charred wood fragments

MATRIX



Figure 7

Unlike the situation described in square N5E9, however, it was possible to distinguish a thin layer of humic soil immediately beneath layer 4a which may be identified as layer 6 (see Figure 7). While this layer does not appear over the entire area of the square, it is clearly discernible in the west half of the unit where it directly overlies layer 7 (as it does in squares N4E5 and N4E4). Only a few artifacts were recovered from layer 6 in this square, the deposit comprised for the most part of a thin lens of soil sloping downward toward the center of the bastion. The recovered material consisted of two fragments of delftware, one fragment of bottle glass and two nails, together with a handful of animal bones, all of the artifacts of probable eighteenth century manufacture.

As in square N5E9, layers 7 and 8c were found over most of the square, sloping downward toward the central area of the bastion. In all of the units described thus far (except N7E7, where they do not appear), layer 7 may be seen to invariably lie immediately above layer 8c. Again, no artifactual material was noted in either of these deposits. A comparatively level accumulation of layer 8 (conjectured grade) was found beneath layers 7 and 8c with the expected absence of associated artifacts. What appeared to be a fragment of charred or carbonized board was noted on the surface of layer 8 at the south edge of the square, however, a position very similar to that of the wood found in N5E9. Again, it is at least possible that layer 6 becomes so thin in this area as to merge with and become indistinguishable from layer 8. A careful removal of layer 8 and close examination of the surface of the underlying sterile subsoil revealed no trace of structural features, not a surprising situation in light of the absence of such features in the units previously described.

The excavation of the three units described above -- N7E7, N5E9 and N7E5 (Figures 5, 6 and 7) -- thus serves to corroborate the interpretations presented earlier concerning the early appearance of the southwest bastion. That is, it is clear from the foregoing discussion and descriptions that the southwest bastion, throughout the historic occupation of Fort Frederick, was characterized by a level but elevationally low central area surrounded by a raised

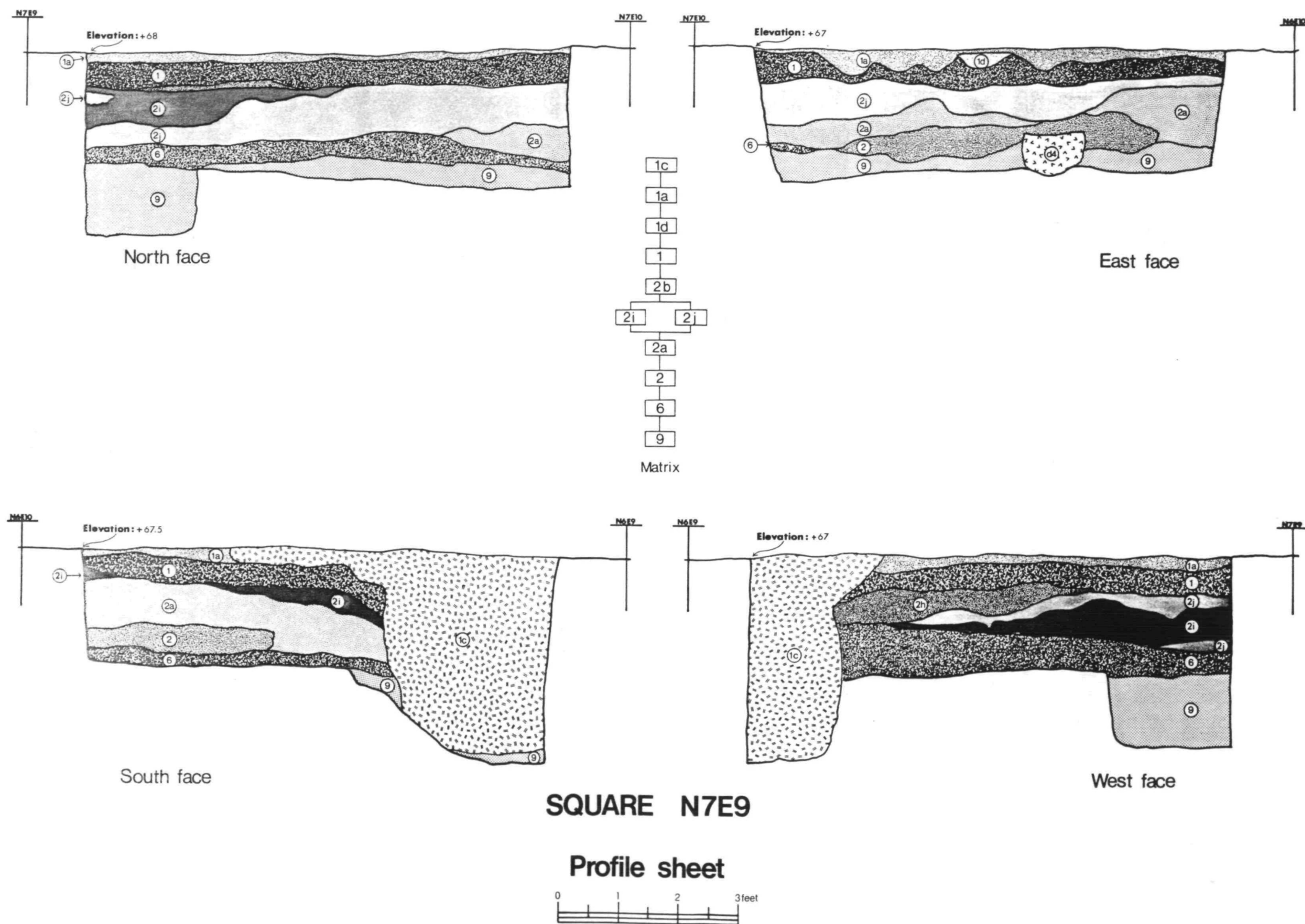
area marking the bastion periphery. This raised peripheral area was formed by the deposition of various deposits of artifactually sterile clayey sand which, since they clearly rest directly upon the original humus surface, were probably deposited as a part of fort construction in 1756.

With the repeated observation that layer 6 lay beneath the shale and various other layers containing differing concentrations of brick rubble (especially layers 3 and 4a) it can be seen that, whatever its function might have been, the band of shale which appears to be concentrated near the inner margin of the raised peripheral area was deposited at some point in time subsequent to the initial occupation of the fort. Moreover, the deposits stratigraphically intermediate between the shale and layer 6 indicate that the peripheral area was raised by as much as twelve inches subsequent to initial occupation.

Following this corroboration of initial interpretations and the tentative acceptance thereof, efforts were focused upon a determination of the function of the two principal areas of the southwest bastion -- center and periphery. A more precise definition of the configuration of the bastion was of course an attendant objective. As may readily be seen in Figure 2, thirteen subsequent units were excavated within the area of the southwest bastion, either in part or in full, in an attempt to fully satisfy project objectives.

Square N7E9 was selected for excavation in anticipation of the recovery of information concerning the articulation of the peripheral and central areas of the bastion with the general interior or parade ground area of the fort (Figures 1 and 2). As can be seen in Figure 8, the stratigraphic sequence observed in this unit, together with the nature of several of the actual strata, contrasted significantly with what had been found in earlier excavated units.

As was the case in square N7E7, the topsoil was once again divisible into two separate deposits, the uppermost deposit probably representing spoil dirt from the 1973 backhoe excavations. Surprisingly, a fairly large number of eighteenth century artifacts was recovered from these two layers, although in an obviously redeposited context. Removal of topsoil, however, revealed



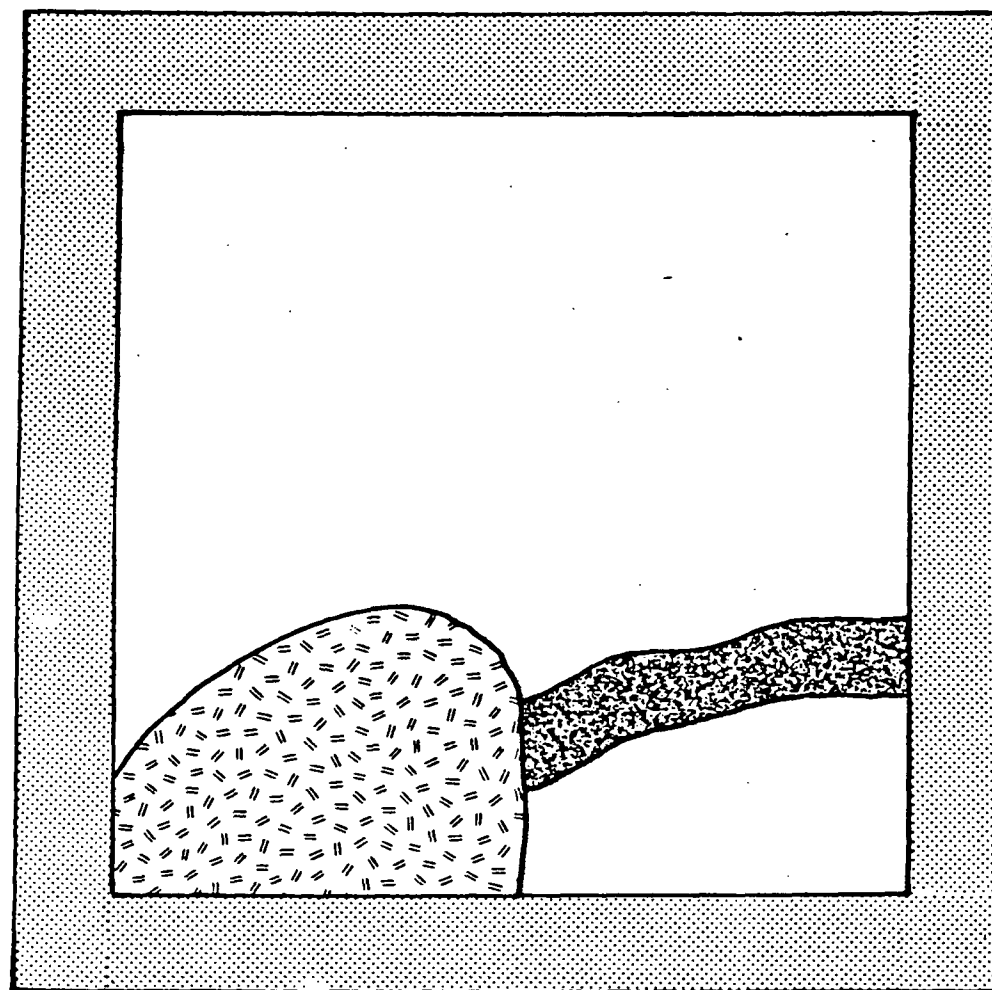
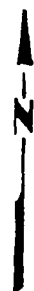
several deposits of sterile fill, two of which -- layers 2i and 2j -- were comprised of a rather thick sandy clay. Layer 2h, also representing sterile fill, was comprised of a yellowish brown clayey sand. Subsequent excavations were to show that this clay fill characterizes the general interior area of the fort, at least in the vicinity of the southwest bastion.

Underlying these deposits of sterile fill, at least in the southeast portion of the square, was layer 2a -- the light brown sandy deposit encountered in earlier units. This layer, in turn, lay directly upon a deposit of shale which ran across the southeastern corner of the square. Elsewhere, layer 2a was directly upon the surface of layer 6, the mid-eighteenth century accumulation of humic soil, bone and artifacts. The most notable aspect of layer 6 in this unit was its thickness, especially toward the southwest corner of the square, together with the large quantity of associated faunal remains. Artifacts recovered from this layer included ceramics, glass, pipestems, buttons, nails, etc., all of probable early or mid-eighteenth century origin.

Although not distinguished during the process of excavation, layer 8 (original humus) was merged with the lowermost portion of layer 6 (see Figure 8). This merging is caused by the similar appearance of the two layers.

A small linear feature (designated Feature 7) was discovered in the southeast corner of the square following the removal of layer 6, and is illustrated in Figure 9. This feature is a shallow depression running generally east to west with an average depth of approximately one and one half inches. Only one small fragment of bone was found within the feature fill, comprised of soil from layer 6 or layer 8. While the function and significance of this feature are unknown, it did not appear to have been formed through the action of natural subsurface disturbances such as rodent burrowing or the decay of tree roots. A careful cleaning of the surface of layer 9 (sterile subsoil) did not reveal the presence of additional early features.

Square N7E9
Plan of Feature 7



KEY



balk



1973 backhoe trench



feature 7



sterile subsoil

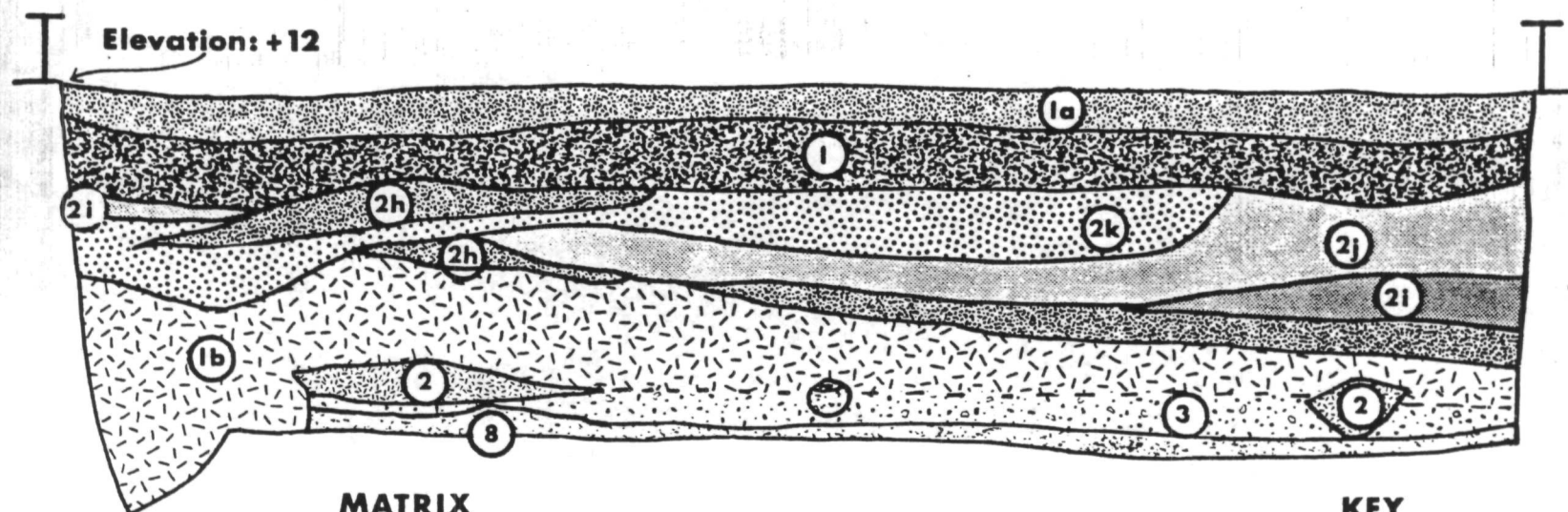
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An additional unit selected for excavation, for much the same reasons as N7E9, was square N8E6, located near the northern corner of the bastion (see Figure 2). Stratigraphically, this unit was very similar to square N7E5, especially in the presence of a narrow band of shale lying just beneath topsoil. Layer 4a, also present in square N7E5, was found over the entire unit and contained a substantial quantity of fragmented brick. A thin lens of layer 6 was noted in the northwest portion of the square, but artifact recovery was minimal. As in previous units excavated near the periphery of the bastion, layers 7 and 8c (both representing sterile fill) were found beneath layer 6 or, where the latter was not present, beneath layer 4a. Although layers 7 and 8c were not as thick in this unit as was the case in squares located closer to the point of the bastion, both still retained the expected downward slope toward the center of the bastion. A thin level accumulation of layer 8 (original humus) lay immediately beneath layer 8c, once again containing no artifactual material, and directly overlay sterile subsoil. An examination of the subsoil revealed no trace of structural features, although it should be noted that much of the square was heavily disturbed by the presence of a 1973 backhoe trench and a narrow CCC trench (see Figure 2).

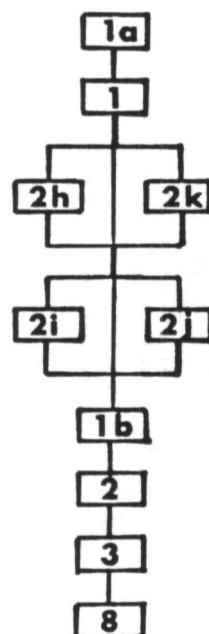
The excavation of squares N7E5, N8E6 and N7E9 (Figures 7 and 8) indicates that the early deposits of sterile fill (layers 7 and 8c) are thicker toward the point of the bastion and, conversely, taper off and disappear as one reaches the opening of the bastion. This probably indicates that the raised area along the interior face of the bastion walls was a feature only of the bastions and that such fill was not placed against the interior of the curtain walls. The presence of layer 4a and the narrow band of shale, both overlying the thin lens of layer 6, further support the earlier hypothesis that the addition of layers 4a and 2 (shale) represent a modification of the bastion periphery which occurred subsequent to initial occupation of the fort. Stratigraphic evidence indicates that this modification involved the raising of the peripheral area by as much as twelve inches.

Two units, N8E8 and N5E6 (Figures 10 and 11), were selected for excavation in

Square N8E8
North Wall
Scale: 1"=1'



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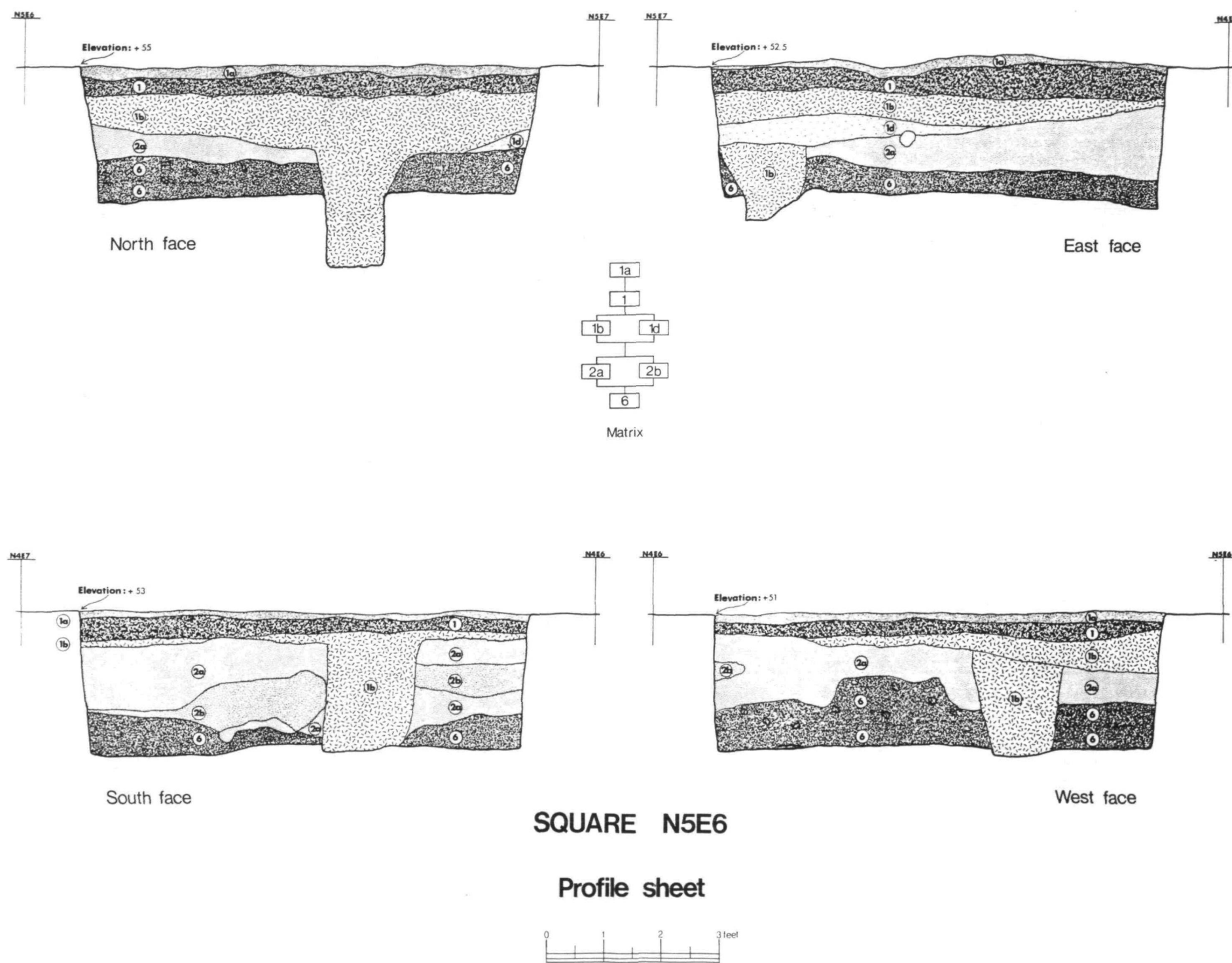


KEY

- 1 topsoil
- 1a soil from 1973 excavation
- 1b CCC trench
- 2 shale
- 2h light orange brown soil
- 2i reddish brown clay fill
- 2j orange brown clay
- 2k light brown fill with mortar
- 3 brick rubble in red brown clay
- 8 grey humus, pre-1756

Figure 10

Figure 11



an attempt to determine the function of the southwest bastion relative to fort activities through the recovery of structural or other features. These units were selected because of their positions, one near the center of the bastion and the other near the opening to the parade ground area. In addition to the recovery of features indicative of activities centered within the bastion, an attendant objective associated with the excavation of square N8E8 was the further definition of the articulation between the bastion and parade ground areas.

In its general appearance, the stratigraphy of square N8E8 was quite similar to that previously encountered in N7E7 (Figure 5), except that layer 2a generally is replaced in the former unit by layers of culturally sterile clay, designated 2i and 2j. While the concentration of rubble encountered in N7E7 is absent, layer 2k (concentration of mortar associated with the rubble) occurs in somewhat larger concentrations.

One important exception to the similarity between N8E8 and N7E7, however, is the presence in N8E8 of a thin deposit of shale in the north section of the unit, illustrated in Figure 10. Elsewhere in the square (where the shale was absent) the layers of sterile clay fill (2i and 2j) lay directly above layer 6. This latter accumulation again yielded artifacts of early and mid-eighteenth century manufacture, including ceramics, nails, bottle glass and pipe stems, together with faunal material. Layer 6 was generally thinner in this unit than it was in square N7E7, with an average depth of approximately two inches. Merging with layer 8, the latter deposit was almost impossible to define, except beneath the shale where layer 6 was absent. Again, no structural features were noted on the surface of layer 9 (sterile subsoil), although it is necessary to emphasize the presence of CCC disturbance in this unit (see Figure 2).

Square N5E6, the location of which is illustrated in Figure 2, proved to be one of the most interesting of all of the units excavated within the southwest bastion. Although rather heavily disturbed by the CCC excavations during the

1930's, this square yielded the thickest deposit of layer 6 and, consequently, the largest quantities of artifacts and bones.

Beneath a comparatively thick layer of topsoil a disturbed deposit of light brown soil resulting from the CCC excavations was encountered which, in turn, lay directly above layer 2a (Figure 11). Layer 6, the eighteenth century humic deposit, lay between 2a and sterile subsoil. Over a significant portion of the square it was possible to discern a subdivision within layer 6, the upper portion marked by the presence of a comparatively large quantity of brick fragments, and the lower portion containing most of the faunal remains. This distinction disappeared, however, toward the east and southeast areas of the unit.

Easily the most distinctive characteristic of layer 6 in this square was the considerable quantity of bone which it contained (Plate 5). A total of 1860 pieces of bone, some of quite substantial size, was recovered from the undisturbed portions of layer 6 alone. Five hundred and sixty additional pieces were recovered from the disturbed deposited overlying layer 6. As noted in the introduction to this report, a detailed analysis of the faunal remains recovered from layer 6 was conducted by Ms. Linda Krakker of the University of Michigan, and her report is enclosed herein as Appendix B.

As was apparent during the excavation of layer 6 in square N5E6, most of the faunal material which was recovered represents the remains of cow (Bos taurus) and pig (Sus scrofa), both domesticated varieties with a small number and variety of additional species. The list of species recovered from layer 6 includes, in addition to cow and pig, domestic sheep (Ovis aries), domestic goat (Capra hircas), white-tailed deer (Odocoileus virginianus), fox squirrel (Sciurus niger), gray squirrel (Sciurus carolinensis), Canada goose (Branta canadensis) and turkey (Meleagris gallopavo). Krakker (personal communication) noted during her analysis of this material that a comparatively large number of skull, mandible and teeth fragments of Sus scrofa were present among the faunal material, but that corresponding fragments of Bos taurus were very few in number. From this observation she is able to suggest that pigs were being

butchered on the spot while cows were initially butchered elsewhere. Mention should also be made of the possible presence among this material of the bones of bison (Bison bison). While it is possible that a few of the larger bones are representative of this species, Krakker feels it is more likely that these represent simply the remains of very large cows. Western Maryland, as Krakker (personal communication) notes, is, however, within the early range for bison (see also Guilday 1963).

The excavation of layer 6 in this square was most productive in terms of artifact recovery. Comparatively large numbers of nails, bottle glass fragments, ceramics, pipe stems and buttons were found within this layer. Also recovered were two silver coins, one dated 1732 and the other 1728, each of which had been cut in half (Plate 9).

Once again, a careful cleaning of the surface of layer 9 (culturally sterile subsoil) did not reveal any evidence of structural features. As in other units having a thick deposit of layer 6, it was not possible to effectively isolate layer 8 (original humus), since both of these layers tended to merge together.

Square N5E5, adjacent to N5E6 (see Figure 2), was selected for investigation in order to expand the excavation of the extensive midden deposit described above. Excavation of this unit, however, revealed only a very small portion of layer 6, with most of the area of the square occupied by thick deposits of layers 2a, 2 (shale), and 3. Unfortunately, the area in which layer 6 disappeared was heavily disturbed by the presence of CCC trenches. The northwest corner of the square, moreover, was heavily disturbed as a result of the 1973 backhoe excavations. While removal of the balk section between squares N5E5 and N5E6 yielded additional faunal and artifactual materials, the aforementioned CCC trenches hindered attempts to define the articulation between layer 6 and the bastion periphery. Also removed was the balk section between squares N5E5 and N4E5, again without the recovery of features or significant numbers of artifacts.

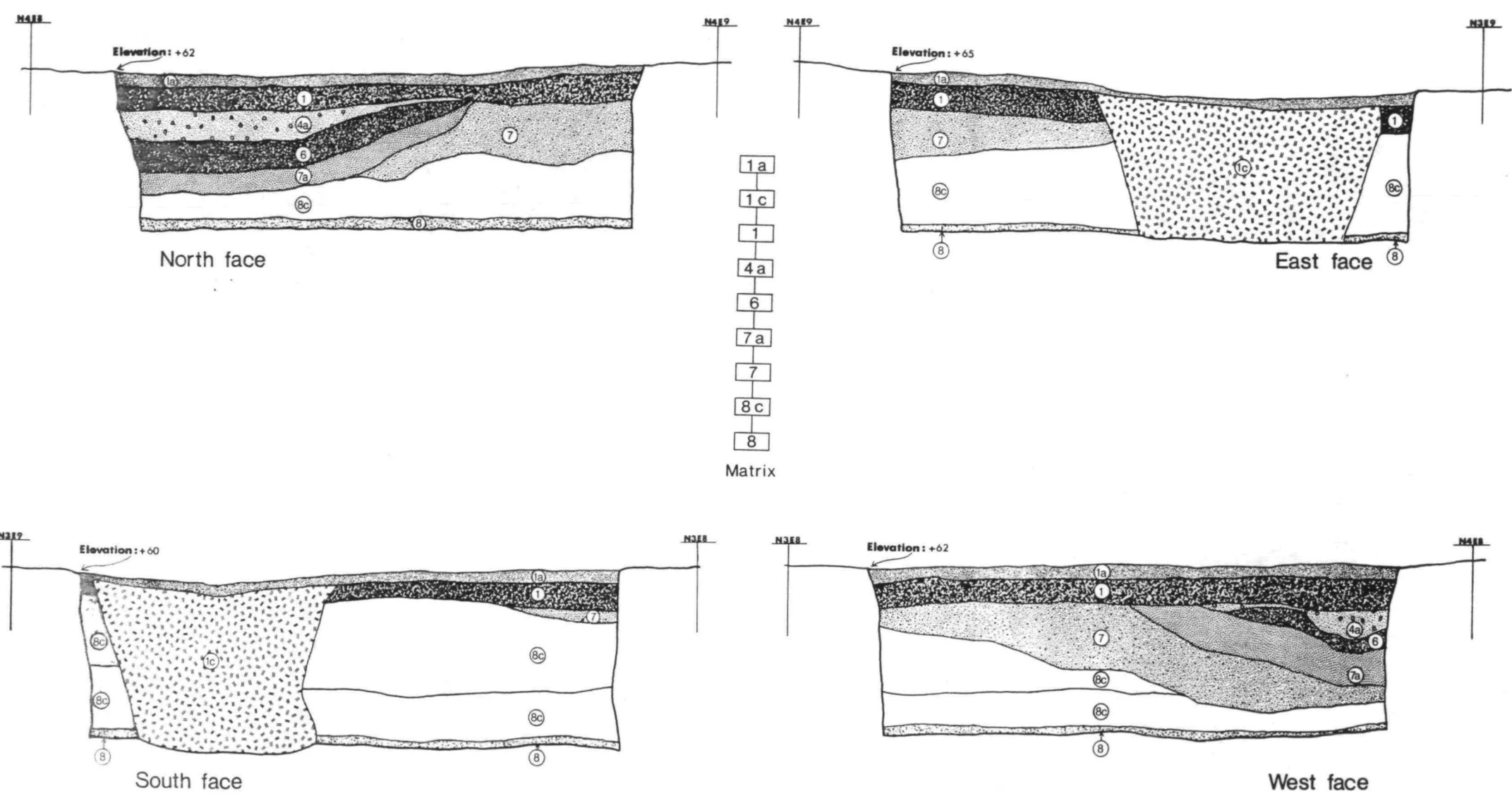
The only unusual feature encountered in the excavation of square N5E5 was located in the southwest corner of the unit and was comprised of two large and irregular stones placed end to end. These stones were laid on the surface of layer 8 and served to retain layer 3, this latter deposit extending further toward the center of the bastion on the north side of the stones than on the south. The exact function of these stones remains unknown, but their discovery strongly affects the interpreted configuration of the interior area of the bastion. That is, the raised peripheral area of the bastion was not of uniform width and contour as it encircled the center of the bastion. Rather, it appears that an indentation into this peripheral area existed near the point of the bastion. This will be discussed further in Chapter 5.

The absence of structural features in the units excavated thus far, together with the large quantity of faunal remains, suggests at least the possibility that the southwest bastion may have functioned more as a midden area than as a locus for any particular activity, unless that activity was butchering. Nevertheless, additional units were excavated in a continuing attempt to define further the configuration and functional associations of the bastion.

In order to examine the peripheral area of the bastion for the presence of structural features, square N4E8 was selected for excavation. As illustrated in Figure 2, this unit was located along the south wall of the bastion in a position analogous to that of square N7E5. With the exception of the absence of a deposit of shale in N4E8, the two squares were remarkably similar in overall stratigraphy.

Removal of a thick layer of topsoil in square N4E8 (layers 1 and 1a) revealed the surface of layer 7, previously interpreted as a layer of sterile fill deposited in order to raise the periphery of the bastion above the level of the central area. As may be seen in Figure 12, however, layer 7 did not initially appear in the northwest corner of the square. Rather the removal of topsoil in this portion of the unit revealed the presence of layer 4a. Since previous excavation had demonstrated that layer 4a was deposited subsequent to

Figure 12



SQUARE N4E8

Profile sheet



the deposition of layer 7, excavation of eighteenth century deposits was begun with the removal of layer 4a. The removal of this deposit revealed the familiar configuration of soil layers sloping downward toward the center of the bastion.

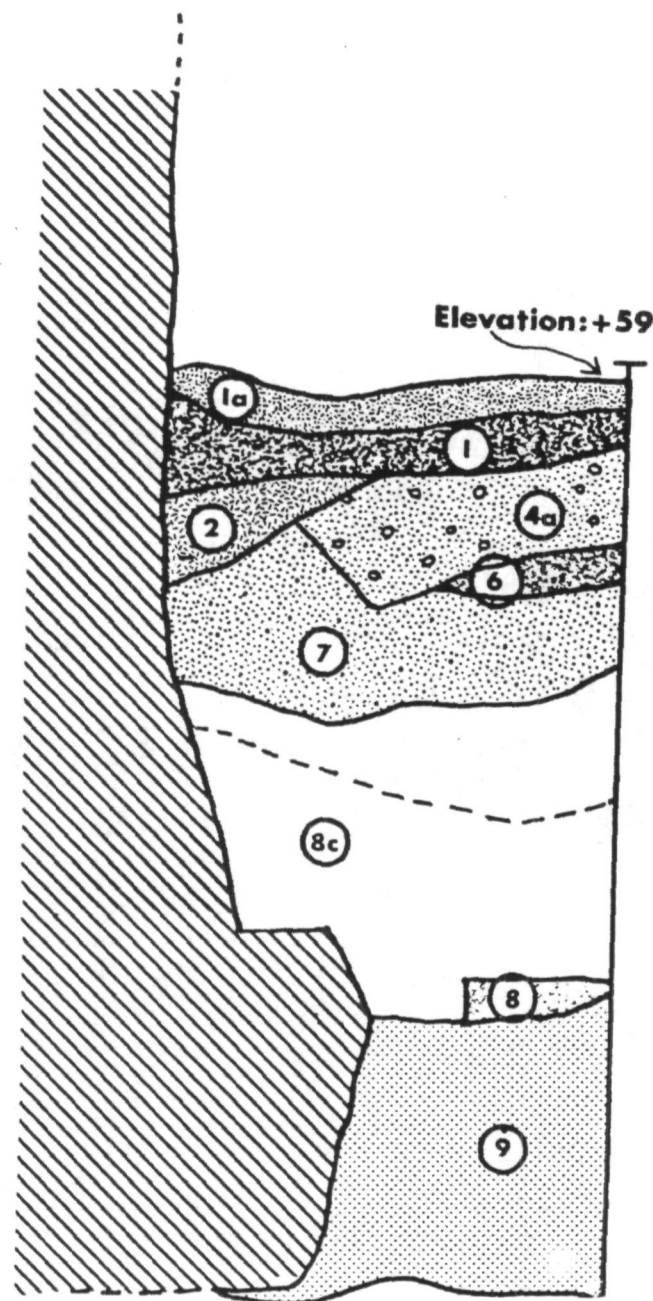
As in squares N7E5 and N8E6, an accumulation of layer 6 was found in square N4E8 immediately beneath layer 4a increasing in thickness, in this case, toward the center of the bastion (see Figure 12). Unfortunately, no artifactual material was recovered from layer 6 in this square. Immediately beneath layer 6 was found a sloping deposit of layer 7a, encountered previously in square N4E4. Layers 7 and 8c were found beneath 7a, layer 8c lying directly upon the original humus layer (layer 8). No artifactual material was found in layer 8, and the subsequent examination of the surface of sterile subsoil revealed no trace of structural features. Although the southeast corner of the square was heavily disturbed by the presence of a 1973 backhoe trench, this disturbance did not seriously affect stratigraphic interpretations in this unit.

While an examination of Figure 12 indicates a depth in excess of two feet for the deposits of sterile fill in this unit (layers 7a, 7 and 8c), it is immediately apparent that the top of these layers has been removed or otherwise artificially leveled at some point during the present century. Thus, the height of the bastion periphery was originally somewhat greater than is presently indicated, at least in the area of square N4E8.

In a continuing effort to determine the configuration and functional associations of the peripheral area of the bastion, square N4E3 was also selected for excavation. One reason for the selection of this particular unit was the opportunity to examine the configuration and extent of layer 6 in the area close to the wall of the bastion. An examination of the strata in square N4E4 (see Figure 4) indicated that layer 6 would also be present in square N4E3.

As illustrated in Figure 13, the excavation of square N4E3 provided informa-

Square N4E3
North Wall
Scale: 1"=1'



KEY

- 1 topsoil
- 1a soil from 1973 excavation
- 2 shale
- 4a light yellow brown soil, brick fragments
- 6 grey brown soil, cultural deposit
- 7 sterile fill
- 8 grey humus,
- 8c yellow brown soil fill
- 9 sterile subsoil
- bastion wall

MATRIX



Figure 13

tion which strongly suggests an elevation for the peripheral area of approximately two feet above original or pre-1756 grade. The fact that layer 6 may be seen to rest directly upon the deposits of sterile fill in this unit (i.e., directly upon layers 7 and 8c) eliminates the possibility that the elevation of the surface of the peripheral area may have been lowered prior to subsequent surficial modifications. While it was not possible to detect the presence of a builder's trench adjacent to the footing of the west wall of the bastion, the abrupt termination of layer 8 at a distance of about six inches from the footing suggests that such a trench may have been present. It may readily be seen in Figure 13 that layers 7 and 8c were deposited subsequent at least to the construction of the lower portion of the bastion wall. Layer 4a, as elsewhere, lies directly upon layer 6 and immediately beneath a deposit of shale. The presence of shale directly against the face of the bastion wall suggests that this material may at one time have covered the entire surface of the raised peripheral area. Topsoil is found directly upon the surface of the shale and, where shale is absent, upon the surface of layer 4a.

Excavation of square N4E3 also revealed that the footing for the bastion wall was not deeply set -- approximately eighteen inches beneath conjectured original grade. While it was hoped that an examination of the surface of layer 9 (sterile subsoil) might reveal the presence of structural features immediately adjacent to the wall of the bastion, such was not the case. Here, as elsewhere, no structural features were evidenced in this or overlying layers. Artifactual material was not found in layer 6 in this square, nor in any of the other layers save topsoil. Thus, while providing information which corroborated the interpretations already made, the excavation of square N4E3 did not yield evidence of any functional associations for the raised periphery of the southwest bastion.

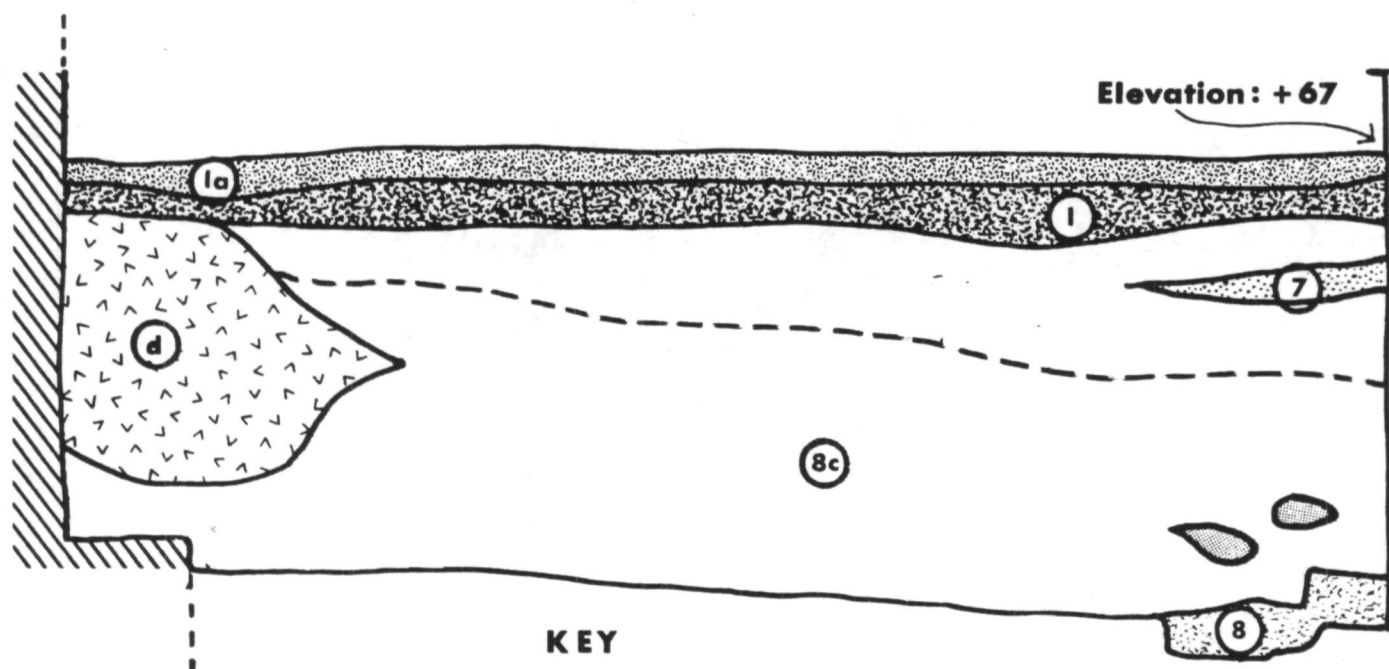
A continuation of the effort to recover evidence of structural features associated with the bastion periphery was manifest in the subsequent excavation of two units against the east wall of the bastion -- squares N5E10 and N6E10 (Figure 2). Square N5E10 was the first of the two units to be excavated and initial investigations yielded data quite similar to that recov-

ered from the excavation of square N4E8. That is, two layers of sterile fill (layers 7 and 8c) were found to lie directly upon the pre-1756 humic surface (layer 8) and directly beneath the modern topsoil. Paralleling the observed situation in square N4E3, the stepped stone footing for the bastion wall was found to lie nearly flush in elevation with the surface of layer 8 (see Figure 14).

The unique feature encountered in the excavation of square N5E10 lay in the presence of a series of parallel depressions (Plate 4 and Figure 15) originating in layer 8 and extending into sterile subsoil (layer 9). The fact that these depressions lay beneath layer 8c limits their relative chronological placement to a period either predating or contemporary with the construction of the fort. As illustrated in Figure 15, the narrow depressions were of uneven width and generally did not exceed two inches in depth. The shape of the depressions suggests that they may have been formed by a number of logs laid side-by-side and paralleling the line of the west curtain wall of the fort. While the function of these depressions, labeled feature 9, is unknown, the fact that they were evidently formed prior to the deposition of layers 7 and 8c admits the possibility that, if related to fort construction, logs might have been laid in such fashion to serve as a track facilitating the hauling of stone. An alternative hypothesis holds that these linear depressions are the result of pre-1756 plowing activity.

Square N6E10 was selected for excavation in order to expand the exposure of feature 9, assuming that it continued in a northerly direction. Again, the stratigraphic succession in this unit was typical of that encountered in previously excavated peripheral squares, albeit with the absence of layer 7. Complicating the interpretation of stratigraphy in this unit, however, was the presence of substantial recent disturbance (see Figure 16 and Plate 4), together with at least one CCC trench. Generally, layer 8 was quite thin in this square, although it was possible to detect a continuation of feature 9 in those areas not disturbed. Feature 9 here showed no significant variation from its appearance as described above. With the exception of the topsoil and the areas of disturbance, neither square N5E10 nor N6E10 yielded artifact-

Square N5E10
South Wall
Scale: 1"=1'



KEY

- l  topsoil
- la  soil from 1973 excavation
- 7  sterile fill
- 8  grey humus, pre-1756
- 8c  yellowish brown soil fill
- d  disturbance
-  dark stains

MATRIX

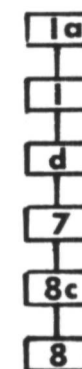
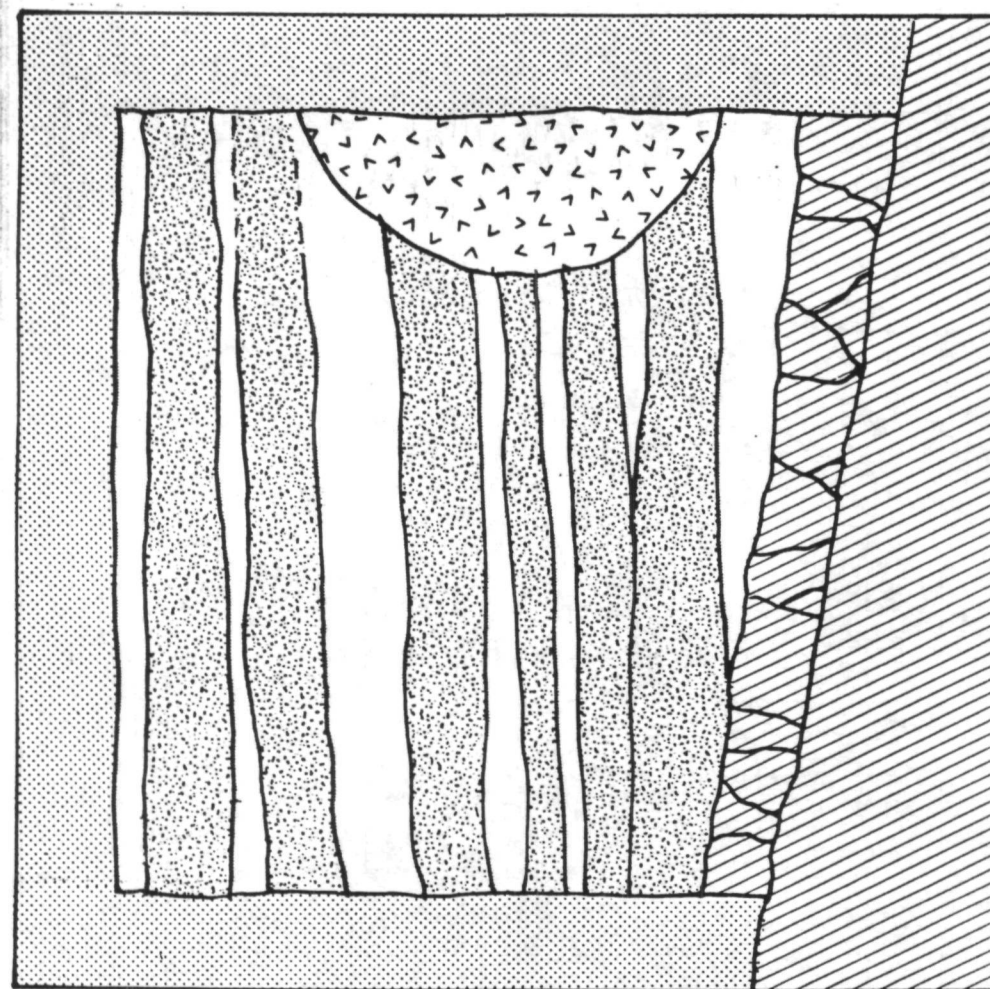








Figure 14

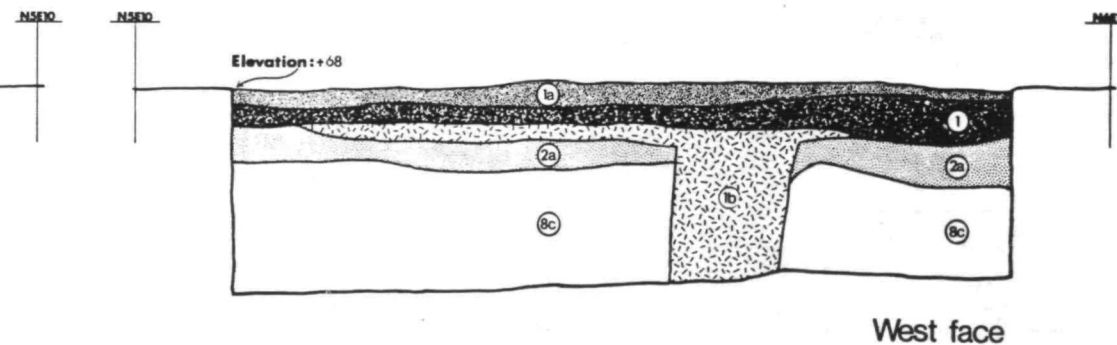
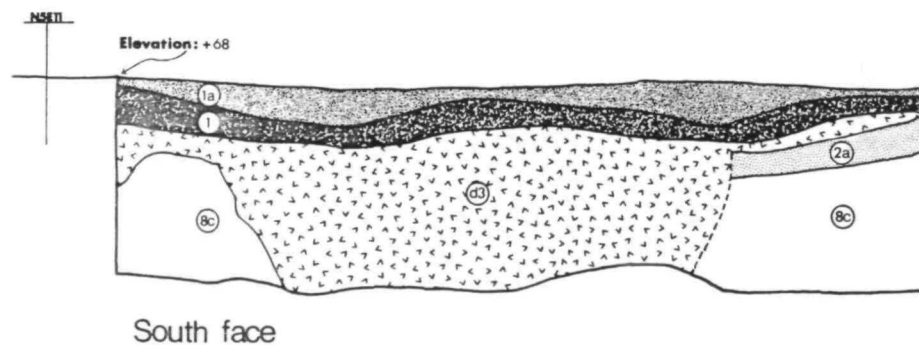
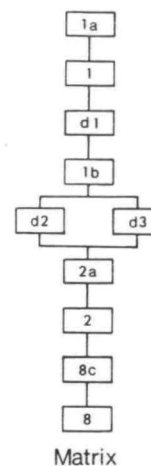
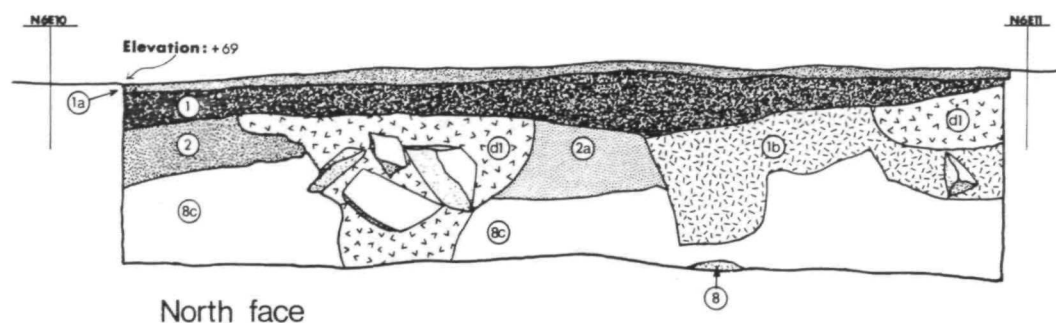
Square N5E10
Plan of feature 9



KEY

-  balk
-  stone wall
-  stone footing
-  disturbance
-  feature 9
-  sterile subsoil

Scale: 1"=2'



SQUARE N6E10

Profile sheet



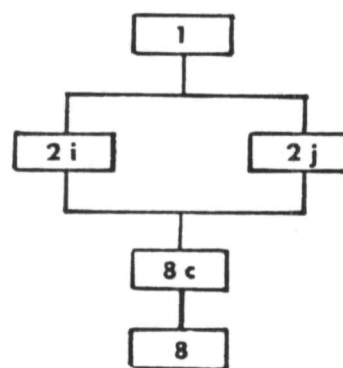
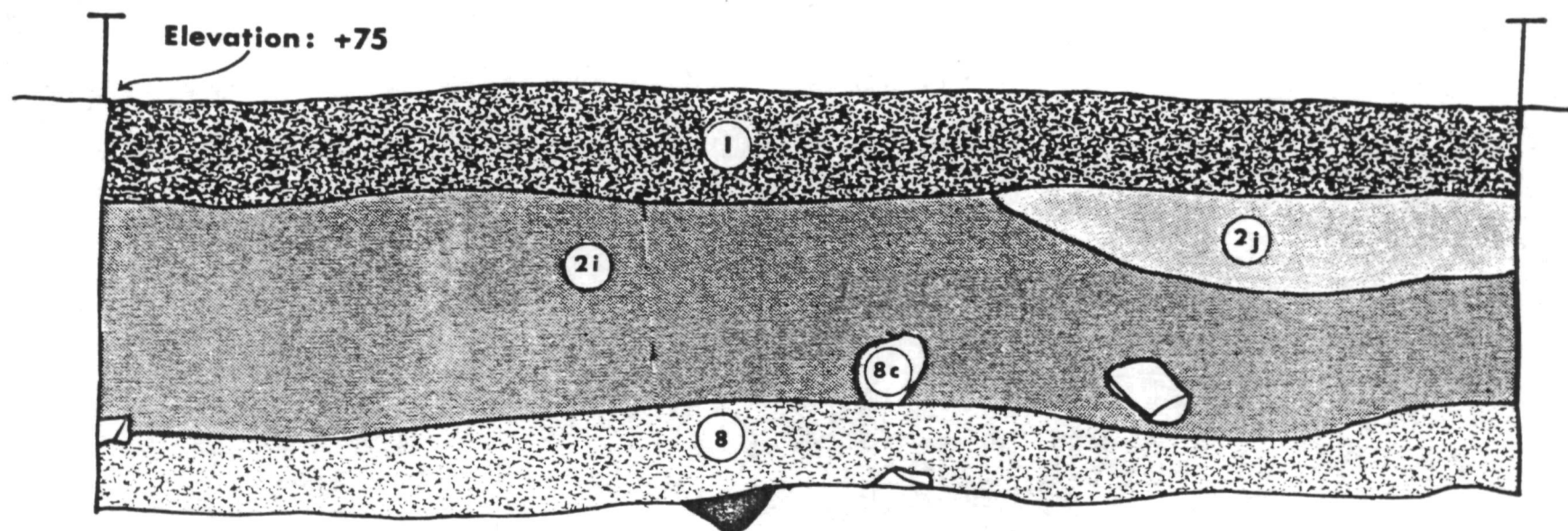
ual materials. Given the absence of layer 6, this situation is not surprising.

Concern for the identification of feature 9 resulted in the granting of additional funds sufficient to extend the period of field investigations by several days. In consultation with Mr. Tyler Bastian, Maryland State Archeologist, it was thought necessary to continue the exposure of feature 9 as well as to investigate the area adjacent to the north wall of the bastion. Excavation of the latter area was prompted by the concern that a similar feature might exist in an analogous or symmetrical position on the opposite side of the bastion. Accordingly, portions of four additional units were excavated during the last week of field investigations, these units designated N7E10, N9E10, N9E6 and N9E7 (see Figure 2).

The first of these units excavated was a portion of square N7E10, specifically a three foot wide section along the north side of the square. Excavation of this unit revealed a stratigraphic succession much like that in square N7E9, with comparatively thick deposits of twentieth century clay fill and topsoil overlying the historic deposits. Although no deposit of shale was encountered, this unit marked the northward extent of layer 8c, the sterile fill associated with the raised periphery of the bastion. Feature 9 continued through this portion of N7E10, although manifest at this point in the presence of only two narrow depressions. The presence of a single CCC trench running diagonally across the unit may, however, have obscured some evidence of additional depressions.

A unit of identical size, N9E10, was then excavated at a point twenty feet to the north of N7E10, again in an attempt to determine the linear extent of feature 9. As illustrated in Figure 17, this unit was comprised largely of recent clay fill (layers 2i and 2j) laid directly upon the surface of layer 8, although it is more than probable that layer 6 represented a portion of this latter accumulation. Fortuitously, feature 9 was found to terminate within this unit. Only a single narrow depression was noted, emerging from the

Square N9E10
South Wall
Scale: 1"=1'



Matrix

KEY





- 1  topsoil
- 2i  red clay
- 2j  orange clay
- 8c  1756 sterile fill
- 8  pre 1756 humus
-  linear feature

Figure 17

south wall and ending in the center of the unit. No additional features were found in association with the terminus of feature 9.

Squares N9E6 and N9E7, portions of which were excavated in order to determine whether similar depressions were associated with the north side of the bastion periphery, revealed only the familiar deposits of layer 7 and 8c overlying the early humic surface (layer 8). No evidence of any features was found within either of these units.

The investigation of feature 9 thus revealed a series of narrow parallel depressions, possibly formed by the laying of a log track or by eighteenth century plowing, these depressions becoming more numerous toward the south end of the exposed area of the feature. While additional excavation of the south end of the feature was not feasible, given the presence of a large deposit of backdirt and its apparent attenuation due to the bastion wall, the location of feature 9 beneath layers 7 and 8c makes its contemporary association with features related to functional activities centered within the southwest bastion extremely unlikely. It should be mentioned at this point that excavations at Fort Ligonier, Pennsylvania, revealed the remains of a log track, in this case connecting the powder magazine with the lower battery (Grimm 1970:31). The Fort Ligonier feature, however, was associated with a service trench and was more regular in appearance than that at Fort Frederick.

In summary, then the excavations conducted within the southwest bastion have served to define an area characterized by a low central area and a raised periphery. Extensive investigation of both areas of the bastion failed to reveal evidence of structural features which might have been related to the existence of such structures as parapets or a powder magazine, although the former probably existed during the initial occupation of the fort. At some point subsequent to the initial occupation of the fort, the peripheral area was raised by a height of approximately twelve inches and topped by a layer of shale, some of which appears to have been removed during the CCC

effort to strip off all topsoil within the interior of the fort. In the central area of the fort a generally undifferentiated deposit of occupational debris and faunal material is found beneath more recent deposits. While the artifacts recovered from within this layer are invariably of early or middle eighteenth century origin, occasional fragments of recent clay pigeons are to be found on its surface, these fragments serving as evidence of both the extent of topsoil removal by the CCC and of the nature of recreational activity enjoyed by members of the Corps. Thus, it is impossible, on the basis of the evidence presently available, to infer a function for the southwest bastion other than that of refuse disposal and, perhaps, a locus for butchering activity (other than, of course, the normal defensive function of any bastion).

(2) ~~Southwest Bastion~~ ^{Fort Exterior}

As mentioned earlier in this report, excavations during the 1977 field season were not limited to the interior of the southwest bastion (see Figure 1). Rather, it was also a major objective of the investigative effort to recover data bearing upon the configuration of exterior fortifications. Two general areas were selected as locational foci for this effort -- the entire area exterior to the west side of the fort and the area outside the east half of the north curtain wall. These two areas were selected largely on the basis of an evident lack of extensive recent disturbance. Aerial photographs showing the CCC excavations in progress, for example, clearly reveal an extensive network of trenching outside the south wall of the fort (see Porter 1936). Such activity is not indicated in those areas selected for testing in 1977, although the discovery of a small stone foundation by the CCC in the area west of the fort suggests that some investigation was conducted in this area. The fact that an opening had been cut through the west half of the north curtain wall was responsible for the limitation of test excavations on this side of the fort to the area outside the east half of this wall. Moreover, the area outside the east half of the north curtain wall and the north wall of the northeast bastion was noted in an aerial

photographic study as being characterized by an elongated anomaly (Strandberg 1974). This anomaly appeared as a somewhat darkened area in the aerial photographs, paralleling and extending approximately fifteen feet from the wall.

Of the two areas described above, the first to be investigated was that outside the north wall of the fort. The excavation strategy adopted was the excavation of a narrow trench oriented perpendicular to the north curtain wall and designated north trench 1, this strategy based upon the assumption that any exterior fortifications would have run parallel to the walls of the fort. Measuring three feet in width, this trench was initially excavated by shovel along the east side of units N32E23 through N34E23 for a distance of approximately twenty-eight feet from the curtain wall and a depth of nearly three feet. The length of the trench was subsequently extended with the use of a backhoe, however, to a total measurement of sixty-eight feet. It was quickly discovered that the anomaly noted in the aerial photographs was not due to the presence of any historically significant feature, but reflected instead the recent deposition (probably CCC) of clay fill, specifically a combination of brown and red sandy clays which were quite similar to the deposits found in the interior of the fort. Outside the area of the anomaly a thick layer of silty loam was found immediately beneath topsoil, overlying a reddish sandy clay. No occupation layer attributable to eighteenth century activities could be defined (see Plate 6). In fact, no artifact bearing strata were found beneath the present topsoil, this layer measuring no more than a few inches in depth.

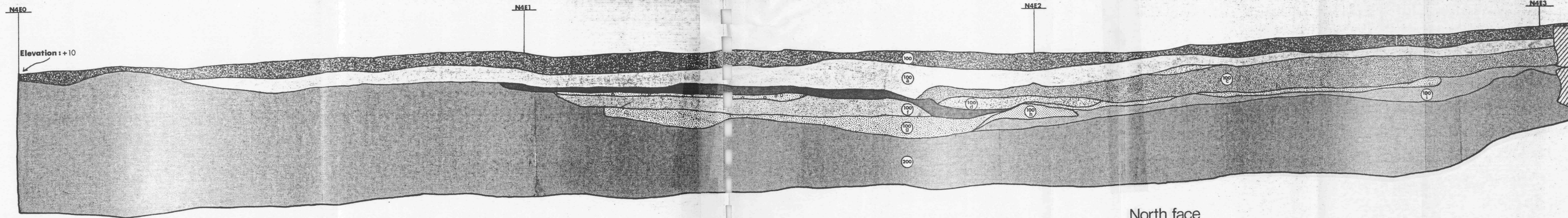
A rather indistinct and irregular pit-like feature was encountered in north trench 1 at a distance of about eighteen feet from the north curtain wall, characterized by yellowish brown clayey silt and extending to a depth of approximately twenty inches. The only organic material encountered within the feature were small occasional flecks of charcoal, and no artifacts were present. The fact that this anomaly or feature appeared in both east and west profiles of north trench 1 required the excavation of at least one additional

trench in order to determine whether the feature was linear and parallel to the curtain wall.

A second trench, north trench 2, was subsequently excavated at a point twenty-seven feet west of north trench 1, comprising a ten by three foot section along the east side of square N33E20. Excavation of this trench to a depth of two feet did not yield evidence of historic features. The clay fill which was noted in north trench 1 was also noted in this unit, again corresponding to the anomaly showing in the aerial photographs. As in the excavation of north trench 1, no artifact yielding strata were found beneath the thin layer of present topsoil.

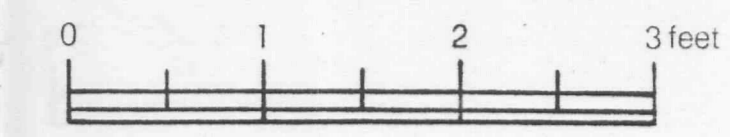
The excavation of two parallel trenches perpendicular to the north curtain wall thus failed to produce any evidence of exterior fortifications. Moreover, the rather low height of the northeast bastion and easternmost portion of the north curtain wall must be seriously questioned, given the nature of the excavated strata. That is, the presence of culturally sterile strata immediately beneath topsoil suggests, together with the shallowness of the footing of the wall, that the low height is a result of a decision to reconstruct or restore the walls of the fort to a uniform or level height throughout, regardless of topographic irregularity.

With the failure to find evidence of fortifications exterior to the north curtain wall, attention was thus shifted to the area along the west side of the fort. As explained earlier, the size of this area, together with limitations of time and manpower, required that any extensive testing be conducted with power equipment, in this case a backhoe (Plate 7). Accordingly, negotiations were concluded with Mr. Paul Mills of Big Pool, Maryland, who excavated five narrow trenches, each three feet in width, perpendicular to the west wall of the fort. In order to economically sample as much of this area as possible, the trenches were laid out along east-west transects at seventy foot intervals (see Figure 1) running alternately east and west from the E0 baseline. Thus, west trench 1 ran east from the E0 baseline along the southern



WEST TRENCH 1

Profile sheet



KEY

- 100 pale brown humus
- 100a light yellow brown silty clay
- 100b black macadam road
- 100c brown silty clay
- 100d pale brown silty clay
- 100e yellow brown silty clay with mortar
- 100f yellow brown silty clay
- 100g mortar
- 100h very pale brown clayey silt
- 100i brown sandy clay
- 200 strong brown clay
- exterior footing SW bastion

portion of squares N4E0 through N4E2, while west trench 2 ran west from the baseline along the southern portion of squares N11W1 through N11W5, and so on. Again, the excavation strategy was one designed to cut across any remains of exterior fortifications running parallel to the walls of the fort.

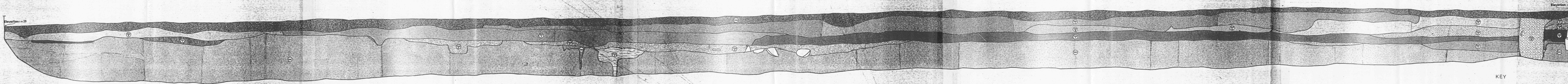
The excavation of west trench 1, stretching between the E0 baseline and the exterior wall of the southwest bastion, immediately revealed an accumulation of strata much more complex than that encountered in the area north of the fort. Figure 18 clearly reveals that most of this stratigraphic complexity occurs within the first twenty feet from the bastion wall and, further that a good portion of this complexity can be attributed directly to the presence of the remains of a macadamized road surface (Plate 8). According to Mr. Tyler Bastian, Maryland State Archeologist (personal communication), a road surface was present in this location during the early twentieth century. Clay fill overlying the macadamized surface is probably attributable to CCC activity, as seen elsewhere during the Fort Frederick excavations. The lowermost layers are comprised of sandy clays and deposits of building mortar, although the lack of artifactual associations makes any chronological attribution somewhat spurious. As far as could be determined from a careful cleaning of the north face of this trench, only the present topsoil yielded artifactual materials, generally of twentieth century appearance. Of significance to the objectives of the 1977 investigations, no features were encountered which might be interpreted as remains of exterior fortifications.

The second trench excavated in the area along the west side of the fort, appropriately designated west trench 2, was excavated west of the E0 baseline along the south edge of squares N11W1 through N11W5 (see Figure 1), extending the width of the sample area to a distance of approximately one hundred and thirty feet from the west curtain wall of the fort. Throughout most of this trench sterile subsoil was found to lie only about six inches beneath the present surface, immediately underlying a brown friable soil yielding occasional artifacts of nineteenth and twentieth century manufacture. The only exception to this sequence was found at the easternmost

end of the trench in the form of a lens of crumbled mortar and several deposits of silty clay, none of which contained artifactual materials. Although no macadamized surface was noted in this trench, it is possible that this feature is related to the road surface unearthed in west trench 1. Again, however, excavation of this trench failed to reveal any evidence of outer fortifications.

By far the longest of the five trenches excavated in the area west of the fort is west trench 3, the north face of which is illustrated in Figure 12 and running along the south edge of squares N18E0 through N18E7 for a length of seventy eight feet. As in the excavation of west trenches 1 and 2, stratigraphic complexity was generally concentrated in the area near the east end of the trench while, at the west end of the unit, sterile subsoil was found at a depth of less than twelve inches beneath the present surface. This apparent complexity, again, is due to the presence of several layers of silty clay fill, deposited in all probability by the CCC. A modern pipe trench was also noted in a position close to and parallel with the west curtain wall (Figure 19). It may be significant that a level deposit of water-smoothed stones was found lying directly upon the surface of sterile subsoil in a position approximately forty feet from the west curtain wall. This feature appeared in both the north and south faces of west trench 3 and may well represent a very early feature, albeit of unknown function. At this point it became apparent that, although the familiar CCC slit trenches were not in evidence in the area west of the fort, considerable alteration of the surface had probably been carried out by the CCC, alteration which may have included stripping and grading. This idea is especially supported by the lack of early occupational layers.

West trench 4, running along the south edge of squares N25W1, through N25W4 for a total length of forty feet, revealed a remarkably uniform stratigraphic profile. Throughout the entire length of the trench a four to six inch thick deposit of light brown topsoil lay directly upon sterile subsoil. At no point was this uniform profile interrupted by features or natural subsurface anomalies.



WEST TRENCH 3

Profile Sheet



KEY

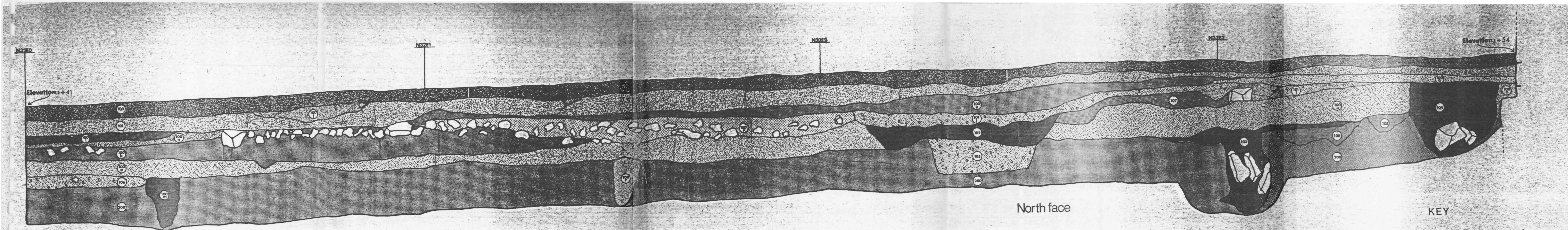
- | | | | |
|------|-------------------------------|------|----------------------|
| 100 | pale brown humus | 100v | very dark grey sand |
| 100a | light yellow brown silty clay | 100w | trench |
| 100d | pale brown silty clay | 100x | black stoney soil |
| 100g | mortar | 100y | brownish yellow clay |
| 100h | very pale brown silty clay | 100z | reddish yellow clay |
| 100i | brown humus | 101z | yellowish red clay |
| 100s | light brown clay | 200 | strong brown clay |
| 100t | grey brown silty clay | 201 | yellow brown clay |

Thus, no evidence of exterior fortifications was uncovered by the excavation of west trench 4, nor were any artifactual materials recovered.

Finally, a trench measuring approximately thirty-eight feet in length was excavated along the south edge of squares N32E0 through N32E3, abutting at its easternmost end the west wall of the northwest bastion. Designated as west trench 5, this unit revealed a sequence of strata and associated features much more complex than that found in any of the previously excavated exterior trenches. The fact that a barn stood in this location prior to the restorative efforts of the CCC no doubt accounts for most of this complexity which, unlike the complexity found in earlier units, was not restricted to the easternmost end of the trench.

An examination of Figure 20 reveals the presence of no less than five vertical anomalies in the north face of west trench 5. Two of these anomalies, designated 100m and 100r, appear to be of a comparatively early origin, possibly predating the construction of Fort Frederick. A sampling of the soil contained in both of these features failed to yield any trace of artifactual or faunal materials. As both of these features appear only in the north face of west trench 5, it is highly unlikely that either is of a linear configuration. A large pit-like feature, designated 103 in Figure 20 and comprised of a dark yellowish brown soil, was noted in the north face of the trench at a distance of about seven feet from the wall of the bastion. This feature may also have an early origin. Although somewhat larger than the features described immediately above, the determination of a date of origin for this anomaly is likewise problematic due to an absence of artifactual materials (although several large and irregular stones were noted). Immediately adjacent to the wall of the bastion was a trench of comparatively recent origin, probably excavated during the course of the CCC investigations.

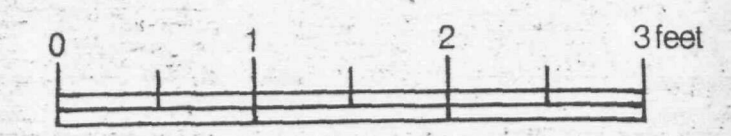
Of all the features noted in the excavation of north trench 5, the most



North face

WEST TRENCH 5

Profile sheet



KEY

- 100 pale brown humus
- 101 light brownish grey topsoil
- 100j very dark grey cinders
- 100k, 107, 200 yellow brown clay
- 100i brown soil
- 101i, 105, 106 brown soil with mortar
- 100m, 102, 103, 104 dark yellowish brown soil
- 100n greyish brown soil
- 100o light greyish brown soil
- 100p grey clay
- 100q light tan soil with mortar
- 100r yellow brown soil with charcoal
- 108 pale brown soil

distinctive is a wide trench, rectangular in cross section, lying at a distance of approximately thirteen feet from the wall of the bastion and designated 105 in Figure 20. From the position of the feature in the south wall of west trench 5, it was possible to determine that the feature roughly parallels the west wall of the northwest bastion. Filled with a mixture of brown soil and bits of mortar, this feature is probably attributable to the presence of a nineteenth century stone barn removed by the CCC as part of their restoration. The large concentration of stone rubble which is strewn to the west of this feature may well represent debris from the destruction of this barn. A thin lens of black cinder at the west end of the trench, on the same level as the stone rubble, is of unknown function, although it may possibly represent an early twentieth century road surface.

As was the case in the other trenches excavated along the west side of the fort, various deposits of culturally sterile clay fill were found immediately beneath the present topsoil, this latter accumulation yielding most of the artifacts recovered during the excavation of the trench. A significant exception to this generalization was the discovery of faunal material in a thin lens of brownish soil lying just above sterile subsoil at the west end of the trench and designated 106 in Figure 20. Although no datable artifactual material was found, it is probable that this deposit represents an eighteenth century cultural accumulation, this interpretation based upon the stratigraphic position of the deposit together with the presence of a few irregular bits of heavily rusted iron. The possibility also exists that this deposit is somehow related to the feature designated 100m, but this relationship is highly conjectural.

Despite an effort to do so, it proved an impossibility to effectively correlate the deposits from one trench to the next, beyond sterile subsoil, topsoil and recent sterile clay fill. This is due, for the most part, to the distance between trenches (sixty-seven feet) and the complexity encountered in west trenches 1 and 5. Moreover, no structural features (such as would result from the construction of exterior fortifications) were present

to serve as horizon markers from one trench to another. Accordingly, a decision was made not to construct a correlation matrix for the deposits encountered in west trenches 1 through 5 as the resulting interpretation would in all probability be more misleading than productive.


SUMMARY

As described in the preceding pages, excavation during the 1977 field season at Fort Frederick was focused largely upon an investigation of the interior of the southwest bastion together with ancillary excavations outside the north and west walls of the fort. These investigations represent the excavation of thirteen complete squares and portions of five additional units within the southwest bastion, together with the excavation of seven trenches of varying length outside of the fort.

Investigations within the bastion resulted in the correlation of a large number of strata and the construction of at least a partial interpretation of the appearance of the bastion during the initial eighteenth century period of occupation. While a complete discussion of this interpretation is reserved for the concluding chapter of this report, the interpreted configuration for the southwest bastion is one characterized by a low and level central area surrounded by a raised periphery. While the periphery may have supported some sort of parapet construction, no structural evidence was recovered. Structural remains were also conspicuously absent in the central area of the bastion, this area characterized by the presence of a frequently thick midden deposit containing a large quantity of faunal remains.

Excavation exterior to the walls of the fort, designed to reveal evidence of any outer fortifications, yielded no features which might be so interpreted. Rather, the excavation of these trenches revealed either no evidence even of early occupational deposits, as in the area north of the fort, or evidence of structures and disturbances attributable to events occurring during the nine-

teenth and twentieth centuries. Two possibly significant exceptions occur in the form, first, of a deposit of water-smoothed stones in west trench 3 and, second, of a lens of soil containing faunal material at the west end of west trench 5.



Chapter 4

Artifact Analysis and Description

ARTIFACT ANALYSIS AND DESCRIPTION

As its title indicates, this chapter is divided into two principal sections; the first concerned with a description of the artifacts recovered during the 1977 excavations and the second comprising a functional classification of these materials and a quantitative comparison of these classes with materials recovered during the course of earlier investigations in other areas of the fort. The materials dealt with in the following paragraphs were recovered almost entirely in the southwest bastion and, for the most part, from the eighteenth century occupational deposit identified in the preceding chapter as layer 6. Almost all of the artifactual material recovered from the exterior backhoe trenches is lacking in stratigraphic provenience while, within the southwest bastion, only those materials from layer 6 can be safely attributed an undisturbed provenience.

Artifact Description

All of the materials recovered beneath modern topsoil within the southwest bastion (including those items not found in layer 6) are indicative of a mid-eighteenth century occupation. As will become apparent from the following descriptions, none of the recovered artifacts can be said with any certainty to date from the period of the fort's use as a prisoner of war camp for British soldiers captured during the American Revolution.

A. Ceramics (Plate 10):

For purposes of description, ceramics are here divided into categories based first upon paste and, secondly, upon varieties of glaze and decoration. Thus, the major descriptive categories consist of earthenware, stoneware and porcelain.

1. Earthenware

a. Tin-glazed earthenware (delft)

Delft represents the largest ceramic category present within

the southwest bastion at Fort Frederick. The fact that excavations of the east and west barracks in 1974 revealed a preponderance of plain white saltglazed stoneware (Israel 1975: Table III) suggests the presence of potentially significant horizontal patterning in the distribution of ceramics at the fort, although it is important to note that these earlier excavations were conducted without the use of screens. A comparison with published reports for Fort Michilimackinac (Miller and Stone 1970:26) and Fort Ligonier (Grimm 1970:159) reveals, moreover, that delftware was the predominant type of ceramic recovered in the excavation of both of these sites.

Ceramics assigned to this category from Fort Frederick invariably had a soft buff colored paste covered with an off-white (generally bluish-white) opaque glaze. According to Miller and Stone (1970:26) this glaze is "essentially a basic lead-glaze to which tin oxide was added, thereby producing a white opaque surface that proved particularly suitable as a ground for painted decoration." Delftware was intended in large measure to compete with porcelain being imported from China, but the softness of the ware and the fragility of the glaze made its use unsuitable, as Noel-Hume (1970:111) notes, for more delicate items such as teacups. Indeed, the fragments of delft recovered at Fort Frederick suggest a preponderance of plates and bowls. With very few exceptions, decoration encountered on delft sherds at Fort Frederick was comprised of simple blue patterns. Of the few fragments bearing polychrome decoration, only two additional colors -- purple and orange -- are in evidence. Delft plates and mugs were produced commercially until at least the end of the eighteenth century (Noel-Hume 1970:111).

b. Redware

Fragments representing approximately ten separate vessels made of red earthenware were recovered from within the southwest

bastion at Fort Frederick. Most recovered examples are of a type identified by Miller and Stone (1970:51) as brown-glazed redware, the actual color of the glaze varying from very dark to light brown. While a few sherds were glazed only on the interior surface, most had both interior and exterior glaze. No fragments of unglazed redware were recovered from within the southwest bastion.

It is evident that a number of fragments of brown-glazed redware recovered from layer 6 are from a single vessel, probably a mug, bearing a decoration near the base comprised of a series of horizontal raised bands. Another fragment is of particular interest as the only example of trailed slipware found during the 1977 investigations. This fragment is identical in appearance to ceramics made in Pennsylvania by the middle of the eighteenth century (see for example National Heritage 1977). This particular fragment, probably representing the edge of a small plate, has a red paste with a light green glaze. A wavy line of trailed slip once encircled the rim, although this has now completely spalled away.

2. Stoneware

a. British brown stoneware

Sherds assigned to this category represent at least several vessels, all of probable utilitarian function. Most of the recovered fragments exhibit a gray slip over a gray stoneware body with a clear saltglaze exterior. One fragment excavated in layer 6 bears a brown saltglaze on its exterior surface and appears to have come from the upper portion of a vessel. Noting that the attribution of manufacture for particular examples of this type of pottery is rather difficult, Miller and Stone (1970:77) state the following characterizations:

This type includes a broad class of utilitarian stoneware that was in general use in Europe and North America during the eighteenth century. Heavy, strong, and particularly suitable for the storage of liquids, the ubiquitousness of this stoneware is attested to by its presence in most colonial sites.

Israel (1975: Table III) notes the recovery of a small number of sherds assignable to this category which were found during the excavation of the enlisted barracks in 1974.

b. White saltglaze stoneware

A total of fourteen fragments of white saltglaze stoneware was found within layer 6 in the southwest bastion. All of these fragments were of a variety designated by Miller and Stone (1970: 70) as plain white or, in other words, lacking in decoration. While it is possible that some of the body sherds are from pieces which had relief decorated borders, all of the rim fragments recovered are devoid of such decoration. White saltglaze stoneware was used primarily for dinner services, especially during the period from 1740 to 1770, its decline directly related to the introduction of creamware after about 1760.

Most of the white saltglaze stoneware fragments found in the southwest bastion are suggestive of cups and bowls, although a few fragments may represent small plates. It would seem perhaps that, at Fort Frederick at any rate, white saltglaze stoneware was employed primarily for those items for which delft was unsuitable (e.g., cups, saucers and small bowls). Miller and Stone (1970:70) state that most of the sherds of this category recovered at Fort Michilimackinac represented pieces of plates and other various items from dinner services.

c. Scratch Blue

Properly, this variety of stoneware belongs as a sub-type within

white saltglaze stoneware. Manufactured between 1740 and 1770 in quantities far less than white stoneware, scratch blue was used primarily for very delicate pieces, especially in tea services. The technique of decoration, from which this type of pottery derives its name, involved the incision or 'scratching' of various designs into the surface of the clay body, prior to firing, followed by the application of an oxide of cobalt to the resulting incisions. The product which emerged after firing was essentially a white saltglaze stoneware with a decoration of narrow blue lines. Only two sherds recovered within layer 6 in the southwest bastion were definitely attributable to this category, compared with the seven fragments recovered from apparently undisturbed contexts in the vicinity of the east and west barracks by Israel (1975: Table III).

3. Porcelain

a. Chinese export porcelain

A total of eight fragments of porcelain was recovered from layer 6 from within the southwest bastion, all of which appear to be of Chinese origin. Tea bowls and (on the basis of a single handle fragment) cups appear to be the only forms represented, while the decoration is exclusively blue on white. Rim fragments exhibit a geometric border on the interior surface. Miller and Stone (1970:82) note the prevalence of blue on white porcelain over polychrome porcelain at Michilimackinac, a situation also encountered at Fort Ligonier (Grimm 1970:160). No fragments of English or European porcelain were recovered during the 1977 excavations at Fort Frederick.

B. Glass:

This artifact class encompasses three functional categories; bottle glass,

table glass and window glass. Due to the extremely fragmentary nature of these materials, however, none are considered particularly diagnostic.

1. Bottle glass

a. Wine bottles

Fragments of glass wine bottles easily accounted for the largest percentage of bottle glass recovered at Fort Frederick. These fragments are of irregular thickness (although base fragments are invariably heavy) and of a dark brown or brownish green color. While it is impossible to reconstruct individual body shapes, the recovered fragments suggest shapes consistent with those published by Noel-Hume (1970:66-67) for mid-eighteenth century wine bottles.

b. Other bottle glass

Occasional fragments of bottle glass not attributable to the preceding category were found during the excavation of the southwest bastion. Very few in number, these fragments were generally distinguishable by color and thinness. Most of the pieces assigned to this general category are of a nearly clear color and of a much more delicate appearance than fragments of wine bottles. It is probable that much of this glass is from pharmaceutical bottles, but this is conjectural.

2. Table glass

Table glass was present at Fort Frederick in the form of several fragments of wine glasses or goblets, at least one fragment of which was a portion of a clear glass stem. No fragments could be attributed with any certainty to glass tumblers. A greater variety of glass, including one tumbler base, was recovered from the barracks excavations in 1974 (Israel 1975: Table III).

3. Window glass

A total of only six small fragments of what is thought to represent

window glass was found within layer 6. Each of the fragments was quite thin and of a greenish clear color. The size of the fragments made it impossible to determine whether the glass was of cylinder or crown manufacture, both techniques being employed during the eighteenth century.

C. Tobacco pipes:

Fifty-two fragments of clay tobacco pipes were recovered during the excavation of layer 6 in the southwest bastion. Of these fragments, only a very few represented portions of bowls, the remainder being comprised of stems. None of the fragments bears any trace of decoration or marking, although the shapes suggested by the recovered fragments are consistent with those diagrammed by Noel-Hume (1970:303) for pipes of mid-eighteenth century manufacture.

D. Weaponry:

Artifacts representative of two individual categories are included within this class -- musket balls and gunflints. Both of these types of artifacts were recovered in numbers surprisingly low, since normally we would expect such artifacts to be in strong association with a large eighteenth century fort.

1. Musket Balls

Only three lead balls were discovered within layer 6, none of them fired and two with mold spurs or sprue still attached. The balls range in size from about .33 caliber to nearly .60 caliber.

2. Gunflints

Two complete gunflints were recovered from layer 6, both within the narrow balk section between squares N5E5 and N5E6. One specimen is representative of what is referred to in the literature as a blade flint (Stone 1974:247), while the other is of a type designated wedge-shaped (Stone 1974:247) or Clactonian style (Witthoft 1966).

The single blade flint is of a blond or 'beeswax' color, typical for this type of gunflint, and shows definite signs of use. The wedge-shaped flint is of a dark gray color, again typifying its classification, and shows signs of limited usage.

E. Clothing:

Elements of personal clothing were represented in the southwest bastion excavations in the form of buckle fragments and buttons. Both types of artifacts were made primarily of brass and pewter, or white brass.

1. Buttons

A total of sixteen buttons or button fragments was found within layer 6 in the southwest bastion, all of metal, comprising both discs and decorated faces. All of the examples recovered are of types found on sites in mid-eighteenth century contexts. Most of the identifiable buttons may be assigned to what South (1964:117) has classified as Type 7, the description of which is as follows:

Brass or white brass discs with brass wire eye fastened to back during casting. The foot and ends of the eye on the button were turned out to form a foot before casting -- this foot is usually hidden by the cast boss. The irregularities of the cast back are removed by a cutting tool as the button is held in a chock and turned. The back is slightly concave, flat, or tapering to a high point or boss at the eye. The concentric rings of the cutting tool around the eye are diagnostic. Some eyes are of iron.

South gives a 1726 to 1776 context for Type 7, as he does for Type 6, this latter type accounting for the second largest variety of buttons found at Fort Frederick during the 1977 field season. South (1964:116) provides the following description for buttons of Type 6:

Cast brass or copper face with Tudor Rose and other designs. Domed brass or white brass back with brass wire eye extending through back. Eye is fastened in place at the time of casting, with metal from the back conforming to the shape of the eye, producing a "burr" or "spur" on each side of the eye. Back and front halves are ground at edges to insure close fit... Front and back fastened together with adhesive flux. Fine seam around edge where back and front meet.

The only remaining type of button encountered during the excavation of the southwest bastion is that identified as Type 8 by South (1964:117). This type closely resembles Type 7, but is not spun and tooled. Rather, the mold seam can be clearly seen on the back of the button.

One example of a sleeve or cuff link was also recovered from layer 6, made of brass and set with unfaceted green glass.

2. Buckles

Four fragments of buckles, all probably representing shoe buckles, were found within layer 6 in the southwest bastion, each including frames and interior hooks and tongues. Pieces of buckle frames are of pewter or white brass, while the hooks and tongues are of brass. One recovered example comprises complete hook and tongue sections, still joined by a corroded iron hinge pin. Noel-Hume (1970:84) notes that buckles are not closely datable, due largely to a lack of research.

F. Coins (Plate 9):

Two silver coins were found in layer 6 in square N5E6, both of which had been neatly cut in two in order to halve their normal value. According to Dr. Marshall Becker of West Chester State College (personal communication), who examined color slides of the coins, they are of a type minted in England for use in the Irish colonies and commonly used in the American colonies during the eighteenth century. These coins bear the dates 1728 and 1732.

G. Nails:

A total of two hundred seventy-seven nails were found in layer 6, many of these in square N5E6 and the balk section between this unit and N5E5. A detailed analysis of this class of artifacts is largely precluded by the

heavily corroded condition of the individual items, although a handful of nails in comparatively good condition show that they are of hand wrought manufacture. This is not surprising in light of the fact that cut nails did not achieve common manufacture until the early years of the nineteenth century (Nelson 1968). At least one of the recovered nails exhibits a flat or spatulate point and it is evident even from a cursory examination of the badly corroded nails that variations in length exist among the recovered sample.

H. Miscellaneous:

1. Jew's Harps

Examples of two jew's harps were found in layer 6 in the southwest bastion. Each of these is of iron and has a round head (as opposed to triangular), both head and shank sections having diamond shaped cross sections. One of the recovered examples is complete, except for the absence of the metal vibrator, although a notch which once held the vibrator is clearly evident at the top of the head.

2. Unidentified artifacts

Included within this category are such materials as a lead strip of unknown function (not of a form used as lead came), a small piece of copper or copper alloy sheeting showing cut marks, and miscellaneous small pieces of heavily corroded iron. It may well be that some of the iron materials are fragments of building hardware, other than nails, but this is purely conjectural.

Artifact Analysis

Two factors combine to simplify the required analyses of artifactual materials recovered within the southwest bastion: first, the fact that only one layer yielded artifacts in a recognizably undisturbed eighteenth century context and,

second, the fact that artifacts were not discovered in association with structural features. The first of these factors obviates the need for a comparative analysis of artifacts of different vertical provenience, while the second erases any necessity for identifying or dating features through the analysis of associated artifacts. What is necessary, however, is a determination of frequency of functional artifact classes within the bastion and a comparison of these frequencies with those resulting from the earlier excavation of the east and west barracks, together with an analysis of horizontal variations or patterning of artifacts within the southwest bastion itself.

1. Artifact class frequency

The classificatory model employed for this analysis is taken from South (1977), a model which employs a series of artifact classes representing behavioral foci of specific functional activities. Without any further description of the artifacts employed in this analysis (all of which are from layer 6), Table I provides a listing of the artifact classes, the corresponding numbers of representative artifacts and the percentage frequency thereof.

TABLE I: Artifact Class Frequencies for Southwest Bastion, Layer 6.

<u>Artifact Class</u>	<u>Artifact count</u>	<u>Artifact percentage</u>	<u>Group percentage</u>
Kitchen group			
1. Ceramics	155	51%	
2. Wine bottle	144	48%	
3. Case bottle			
4. Tumbler			
5. Pharmaceutical bottle			
6. Glassware	3	1%	
7. Tableware	1	.3%	
8. Kitchenware			
Total Kitchen	303		44.822%
<hr/>			
9. Bone	3360		
<hr/>			
Architecture group			
10. Window glass	6	2%	

TABLE I (Continued):

11. Nails	277	96%
12. Spikes	2	.7%
13. Construction hardware	3	1%
14. Door lock parts		
Total Architecture	288	42.604%
<hr/>		
15. Furniture		
<hr/>		
Arms group		
16. Balls, shot, sprue	3	38%
17. Gunflints, spalls	4	50%
18. Gun parts	1	13%
Total Arms	8	1.183%
<hr/>		
Clothing group		
19. Buckles	4	20%
20. Thimbles		
21. Buttons	16	80%
22. Scissors		
23. Straight pins		
24. Hook and eye		
25. Bale seals		
26. Glass beads		
Total Clothing	20	2.959%
<hr/>		
Personal group		
27. Coins	2	100%
28. Keys		
29. Personal		
Total personal	2	.296%
<hr/>		
30. Tobacco pipes	52	7.692%
<hr/>		
Activities group		
31. Construction tools		
32. Farm tools		
33. Toys		
34. Fishing gear		
35. Stub-stemmed pipes		
36. Colono-Indian pottery		
37. Storage items	1	34%

TABLE I (Continued):

38. Botanical		
39. Horse tack		
40. Miscellaneous hardware		
41. Other (jew's harps)	2	66%
42. Military objects		
Total activities	3	.444%
<hr/>		
Total Artifacts (without bone)	676	100.00%
Total Artifacts (with bone)	4036	
<hr/>		

As can be readily seen in the above table, the largest class of artifacts recovered within the southwest bastion in layer 6 is that reflective of kitchen associated activities (i.e., food preparation and food serving). The architecture group accounts for the second largest class of artifacts. It is surprising that artifacts representative of weaponry account for less than two percent of all artifacts recovered in this eighteenth century military context. By way of contrast, South (1977:161) notes that this class of artifacts accounts for 8.4% of all artifacts recovered within Fort Ligonier, Pennsylvania. The low percentage of weaponry related artifacts within Fort Frederick is even more marked in the small numbers of such items recovered by Israel (1975: Table III) -- 1.3% -- during his investigation of the east and west barracks. Moreover, it should be noted that the 1974 and 1977 investigations at Fort Frederick resulted in the recovery of only one artifact assignable to category number 42 -- military objects -- a category which South considers to be the most sensitive for determining the difference between military and non-military domestic sites. The item recovered is a six pound iron cannon ball found during excavations outside the west barrack (Israel 1975: Table III).

Table 2, below, shows an interesting comparison of artifact class frequencies excavated in the southwest bastion and in the area of the two barracks.

TABLE 2: Comparison of Artifact Class Frequencies -- Southwest Bastion and Enlisted Barracks.

Artifact group	<u>Southwest bastion</u>		<u>Enlisted barracks</u>	
	Count	%	Count	%
Kitchen	303	44.822%	132	28.08%
Architecture	288	42.604%	287	61.06%
Furniture	0	0	1	.21%
Arms	8	1.183%	5	1.06%
Clothing	20	2.959%	29	6.17%
Personal	2	.296%	5	1.06%
Tobacco pipes	52	7.692%	7	1.48%
Activities	3	.444%	4	.85%

Significant variations in artifact group frequencies are immediately apparent in Table 2, the most striking of which occur in the kitchen and architecture groups. Whereas the kitchen group is the largest single category within the bastion, the architecture group accounts for the overwhelming majority of artifacts in the vicinity of the two barracks. Another significant difference occurs in the clothing group which accounts for only three percent of artifacts in the bastion, but for over six percent of artifacts from the barracks excavations. Surprisingly, tobacco pipes account for only one and one-half percent of artifacts associated with the barracks, while this same category represents more than seven and one half percent of the materials from the bastion. The personal group, as was the case with items of clothing, represents a greater percentage of artifacts in the area of the barracks than within the bastion. Again, it should be emphasized that, in contrast with the 1977 excavation of the southwest bastion, the excavation of the east and west barracks was undertaken without the use of screens for artifact recovery.

Combining the artifact totals and percentages for the two groups compared above

permits a more meaningful comparison of the Fort Frederick artifact assemblage with that reported for other eighteenth century frontier forts. Such a comparison, employing figures reproduced in South (1977), is shown in Table 3 below:

TABLE 3: Comparison of Artifact Group Frequencies From Three Mid-Eighteenth Century Military Sites.

Artifact group	Fort Frederick, Maryland		Fort Prince George, S.C.		Fort Ligonier, Pennsylvania	
	Count	%	Count	%	Count	%
Kitchen	435	37.95%	1679	22.7%	5566	25.6%
Architecture	575	50.17%	4252	57.5%	12,112	55.6%
Furniture	1	0.0008%	6	0.1%	44	0.2%
Arms	12	1.13%	471	6.4%	1820	8.4%
Clothing	49	4.27%	70	1.0%	833	3.8%
Personal	7	0.61%	9	0.1%	99	0.4%
Tobacco pipes	59	5.14%	851	11.5%	411	1.9%
Activities	7	0.61%	50	0.7%	893	4.1%
	1146	99.88%	7388	100.0%	21,778	100.0%

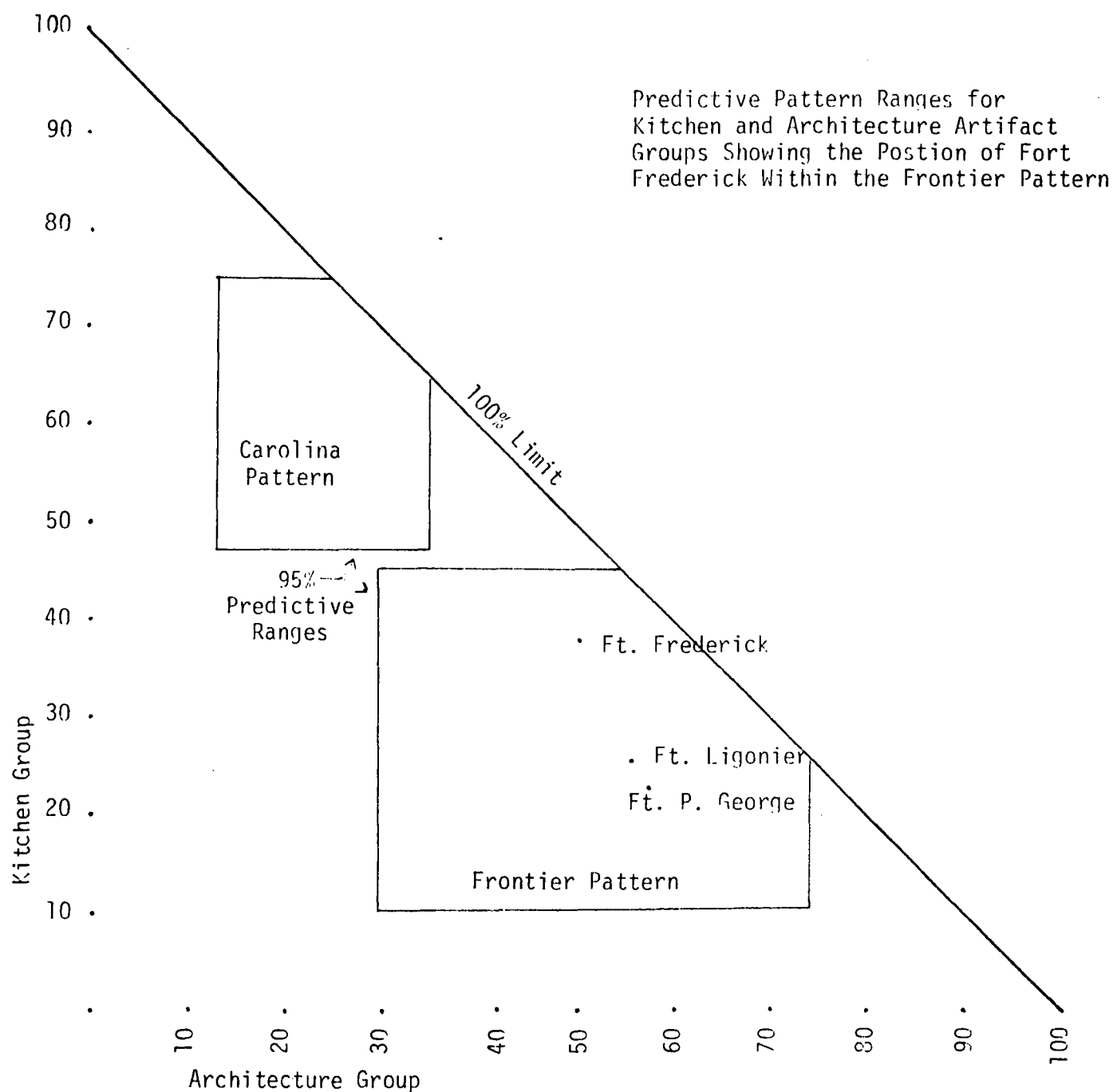
Both Fort Ligonier and Fort Prince George are, like Fort Frederick, French and Indian War forts constructed during the mid-eighteenth century, all three forts occupied or garrisoned at roughly the same time. Table 3 reveals that the combination of artifact frequencies from the 1974 and 1977 excavations at Fort Frederick brings the percentages for the artifact groups much more in line with those from contemporaneous military sites. In fact, only two artifact groups appear significantly different at Fort Frederick -- the kitchen group and the arms group. The first of these variations may simply reflect the extensive nature of the excavations within the southwest bastion, a portion of which was comprised of a kitchen midden. As excavations are conducted in other areas of the fort this percentage may be lowered as the percentage of artifacts assigned to the architecture group increases. Likewise, such future excavations may also provide additional artifacts assignable to the arms category, although it is possible that the small number of such materials recovered thus far is reflective

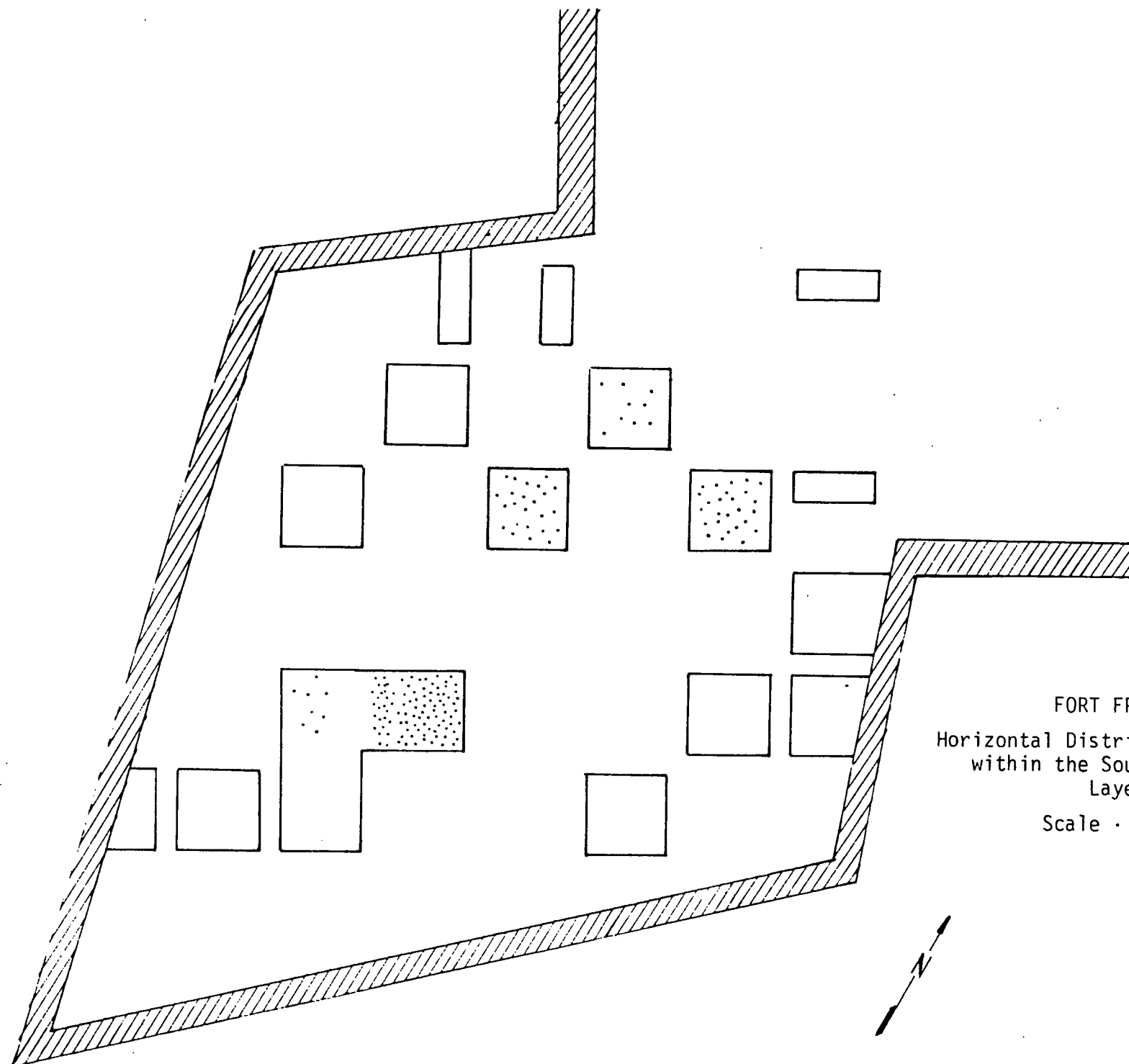
of the fact that Fort Frederick was never directly involved in military activity. Kimmel (personal communication) notes, however, that existing documentation attests to the shipments of muskets and carbines to Fort Frederick.

In any case, the artifact group percentages from Fort Frederick reveal a strong association with the general Frontier Pattern as defined by South (1977:141ff), one which is characterized by the dominance of architectural over kitchen related artifacts. In non-frontier sites it is generally the kitchen group which contains the largest numbers of artifacts. Figure 21 illustrates the differential patterning of artifacts between frontier and non-frontier sites (the latter exemplified by what South (1977) has termed the Carolina Pattern), this figure (adapted from South 1977:147) also showing the position of Fort Frederick firmly within the predictive range of the frontier pattern.

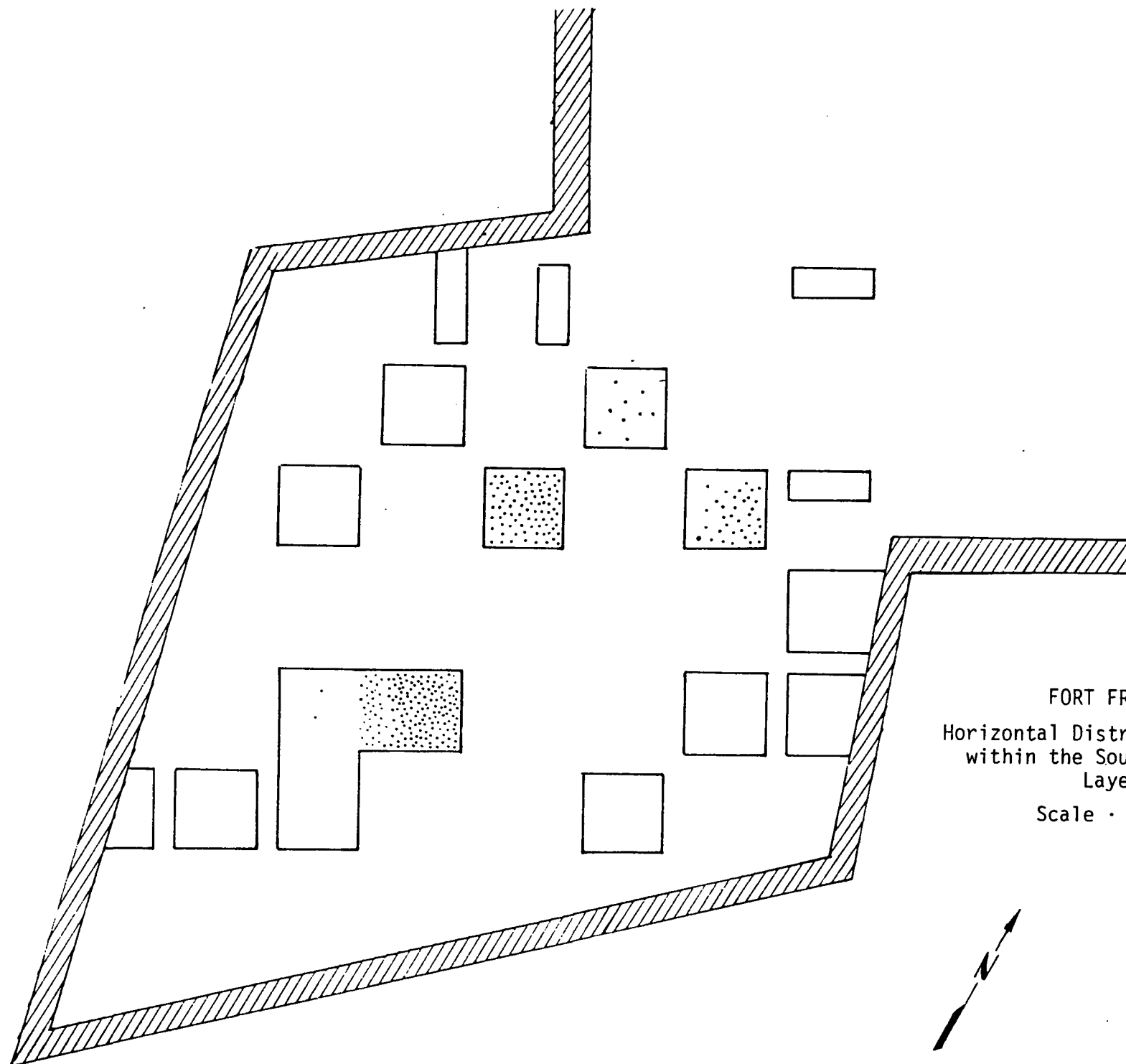
Having noted the differences in artifact group frequencies between the southwest bastion and the areas of the east and west barracks, an additional point of interest was the possibility of horizontal patterning within the bastion itself. Accordingly, two classes of artifacts -- ceramics and nails -- were examined for pattern of horizontal distribution within layer 6. While it was anticipated that ceramics might indicate patterning within general artifact disposal, it was hoped that a study of nail distributions might yield patterns reflective of structure locations. An examination of Figures 22 and 23, however, indicates that no such patterning, for either of the artifact classes studied, is present. While it may at first glance appear that the concentration of artifacts in square N5E6 may be of some significance, this clustering is probably reflective of the comparatively thick deposit of layer 6 in this location.

An additional point of interest exists in regard to the ceramic assemblage which was recovered from layer 6 in the southwest bastion. Specifically, an attempt was made to test the utility of the "Mean Ceramic Date Formula" for its applicability to the dating of ceramic assemblages from Fort Frederick. This formula has been developed by Stanley South who has published a number of examples of its application to the dating of ceramic assemblages from historic sites (see for example South 1972; 1974; 1977). In a recent publication,





FORT FREDERICK
Horizontal Distribution of Ceramics
within the Southwest Bastion
Layer 6
Scale • = 1 Sherd



FORT FREDERICK
Horizontal Distribution of Nails
within the Southwest Bastion
Layer 6
Scale · = 1 Nail

South (1977:228) notes that applications of the formula thus far have yielded dates with an average of only four years deviation from known historic median occupations of the eighteenth century, the largest single deviation being only nine years. The application of the formula to the Fort Frederick material is illustrated in Table 4 below:

TABLE 4: Application of the Mean Ceramic Date Formula to Ceramics .
Recovered From the Southwest Bastion, Layer 6.

<u>Ceramic type</u>	<u>Type median</u>	<u>Sherd Count</u>	<u>Product</u>
Underglaze blue Chinese porcelain	1730	8	13840
British brown stoneware	1733	3	5199
Westerwald blue stoneware	1738	1	1738
Decorated delftware	1750	33	57750
"Scratch blue" white saltglaze stoneware	1760	2	3520
White saltglaze stoneware	1763	14	24682
		<u>61</u>	<u>106729</u>

$$\text{Mean Ceramic Date} = \frac{106729}{61} = 1749.6$$

From the above table it can readily be seen that the date derived by application of the mean ceramic date formula predates the construction of the fort by a period of approximately six years, exceeding the average variation of four years which, as noted above, is derived from the many applications of the formula by South. It should be noted that the sherd counts given in the table reflect an adjustment, in the case of British brown stoneware, to represent a vessel count rather than a raw sherd count. In the absence of such an adjustment, the mean ceramic date would have been even earlier than that given in Table 4 (1746.92). An explanation for the early nature of the Fort Frederick

ceramic date probably lies in the very broad date ranges for the individual ceramic types recovered, although the position of the fort as a frontier site seemed to hold the possibility of an explanation -- that is, the possibility that the introduction of new ceramic varieties may have been delayed. Recovery of fragments of creamware from layer 6 would, as Garry Stone (personal communication) notes, significantly affect the ceramic mean date as this type of ceramic has a type median date of 1791. An application of the mean ceramic dating formula to the ceramic assemblage from Fort Prince George, South Carolina, a site also included within the frontier category, lends no support to this hypothesis, however, as the ceramic date obtained for this site is 1763.0 (South 1977:224), two years later than the known median occupation date. It will be interesting to observe how the Fort Frederick ceramic date is affected by artifact recovery from future excavations.

Finally, it bears repeating here that an analysis of faunal material recovered in square N5E6 and the adjacent balk section N5E6/N5E5 was carried out by Ms. Linda Krakker of the University of Michigan. Her analysis, appended to this report, indicates that, in addition to pig and cow being the primary sources of animal protein, interesting patterns of resource utilization existed during the occupation of the fort. For example, most of the cows which were utilized for food were apparently immature, as were pigs. Furthermore, it is somewhat surprising that very few bones of non-domesticated animal species were recovered (especially deer), a situation which suggests that hunting was not a very important activity. Finally, very few of the bones had been cooked prior to their disposal in layer 6. It is very strongly recommended here that an analysis of faunal material recovered from future excavations in other areas of the fort be carried out for comparison with the material from the southwest bastion. Such a comparison might indicate significant variations in the pattern of bone disposal within the fort, as well as variations over time.



Chapter 5

Summary

Interpretations

Recommendations

SUMMARY, INTERPRETATION AND RECOMMENDATIONS

An attempt has been made in the preceding chapters to describe the scope and strategy of the 1977 archeological investigations at Fort Frederick, the results of those investigations, and to describe and analyze in a comparative fashion the artifacts recovered within an eighteenth century occupational layer in the southwest bastion. As noted at the beginning of the report, the 1977 excavations were guided by a set of specific goals, and it is a primary objective of this final chapter to determine to what extent these goals have been met. This determination will comprise the initial portion of this chapter, in combination with interpretations of the recovered data, followed by recommendations for further archeological excavation and a concluding statement.

Evaluation and Interpretation

Goal 1: *Determine the nature of any activities within the southwest bastion during the historic occupation of the fort.*

It should be obvious from chapters 3 and 4 that the archeological record for the southwest bastion provides no evidence for the loci of any particular activities or associated structures. Rather, the use to which the southwest bastion was put, aside from its defensive function, would appear to be as a locus for the disposal of kitchen related refuse, especially for the disposal of the bones of butchered animals. No structural evidence exists to support the possibility that butchering actually took place within the bastion. Aside from the comparatively high percentage of kitchen related artifacts, the artifact assemblage from the southwest bastion is very much typical of assemblages recovered from contemporary eighteenth century forts. Horizontal analysis of the artifacts recovered within the bastion does not yield any evidence of clustering of any particular class of artifacts.

One possibility which has not received mention heretofore is that of the problem of drainage within the fort and its effects upon the suitability of the southwest bastion for the location of specific types of structures and activities. Specifically, it can be clearly seen on existing topographic maps of the fort that drainage is from northeast to southwest and

that the southwest bastion encompasses the lowest elevation within the limits of the fort. The historic elevation of the central area of the bastion -- in some spots more than two feet below the present surface -- would only have magnified the problem of drainage. With the raised peripheral area, moreover, the center of the bastion may have been somewhat of a mire.

If water was, in fact, a problem within the southwest bastion, it probably would not have been a suitable location for a structure such as a powder magazine. Magazines in contemporary forts were generally at least partially subterranean, that at Fort Ligonier having a floor lying some eight feet beneath the present surface. It seems obvious that such subterranean construction would have been incompatible with problems of drainage.

Goal 2: *Determine, in particular, whether a powder magazine was present in the southwest bastion.*

In the absence of a complete excavation of the southwest bastion, the possibility that it may have held a powder magazine cannot be rejected with complete certainty. The fact that extensive excavations, both in 1977 and in 1973, have failed to locate remains of such a structure, however, together with the problem of drainage as discussed above, make the existence of such remains highly unlikely. The lack of clustering of artifactual materials likewise contributes to the unlikely existence of a powder magazine in the southwest bastion.

Goal 3: *Determine the nature of parapet construction within the southwest bastion.*

The failure to recover any evidence of parapet construction was the most disappointing aspect of the 1977 investigations. Unlike the problems of the existence of a powder magazine, or even that of exterior fortifications, it is probable (but not documented) that the structures in question -- parapets -- once existed within the southwest bastion. The fact that the stratigraphic evidence recovered within the bastion indicates that

the elevation of the peripheral area was approximately the same as it is today make the absence of parapet remains very difficult to explain. While it is possible that valuable evidence was destroyed by the CCC during the removal of the uppermost ten inches of soil (see, for example, Figure 12), it is unlikely that this disturbance would have destroyed all evidence of parapet construction. The raised periphery of the bastion obviously bears an important relationship to the design and configuration of the parapets, if such structures were present, but the exact nature of this relationship remains unknown.

Goal 4: *Determine the nature of any exterior fortification.*

The excavation of five trenches exterior to the west side of the fort and two trenches outside the north curtain wall has yielded entirely negative evidence pertaining to the existence of exterior fortifications. This is not to be taken as proof positive that such structures were not an original feature of the fort, but that exterior fortifications of the classic type (e.g., scarp, counter scarp, etc.) were not present on the north and west sides of the fort. Given the problems encountered in the initial completion of the fort as noted in Chapter 2, it is perhaps not surprising that massive outerworks were not constructed. Outer fortifications may, rather, have consisted of a system of redoubts and palisades. Ft. Ligonier (Stotz 1974) is known to have had such features, including a large retrenchment, but the comparison of the two forts may not be an entirely valid one. At any rate, this question will have to await the completion of future excavations in areas outside the walls of the fort.

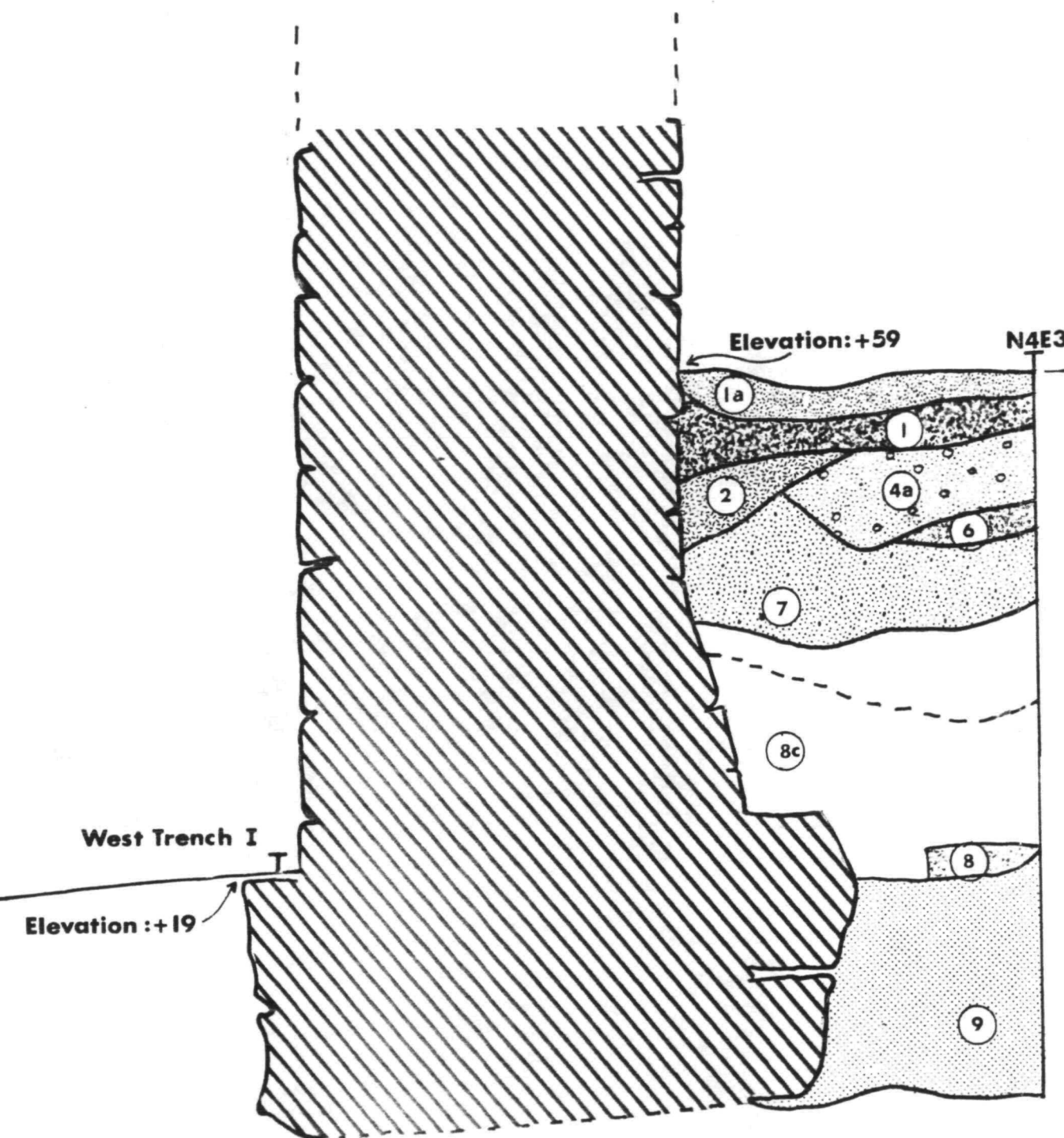
In addition to information bearing upon the satisfaction of specific project goals, the recovered data permit an interpretation of the configuration of the southwest bastion, as well as an interpretation of changes in this configuration over time. While such interpretations are sketchy at certain points, they at least provide a basis for comparison with the results of the 1973 excavations in the northeast bastion and, further, a basis for the establishment of generalizations regarding bastion construction at Fort Frederick. Comparison and generalization should at least provide a set of testable hypotheses

applicable to the eventual excavation of the southeast bastion.

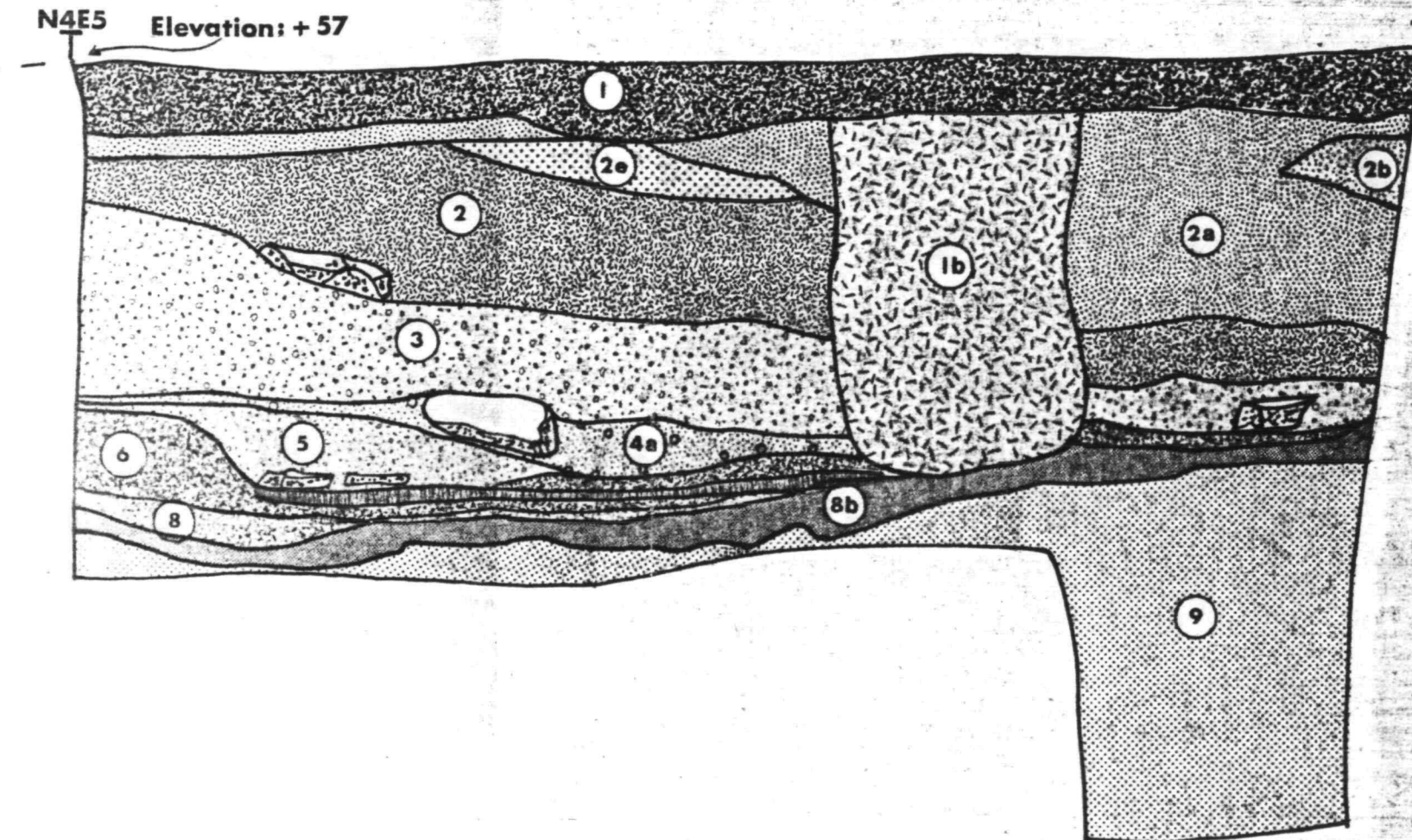
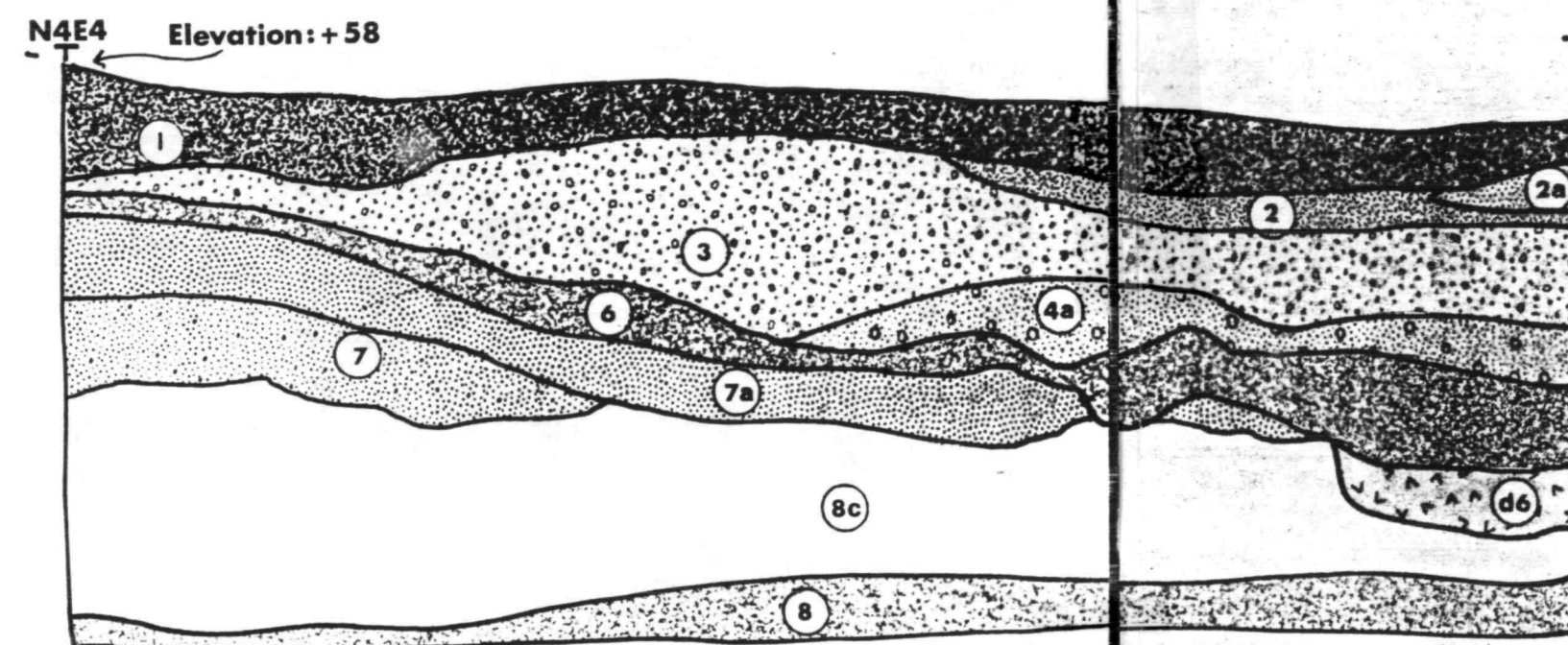
It should be apparent from Chapter 3 that the most striking characteristic of the original configuration of the southwest bastion is the raised periphery surrounding a lower central area. Excavation of a number of squares in the peripheral area of the bastion has provided overwhelming evidence that this raised periphery was a part of initial fort construction, as no occupational accumulation is present between the peripheral deposits and the pre-1756 humus (see Figure 24). Evidence from squares excavated on the west side of the bastion indicates that the occupation layer from the initial occupation period of the fort (1756-1759) extends over the raised periphery to a point very close to the bastion wall. While there can be little doubt that layer 6 was deposited during the initial occupation of the fort, no such interpretation can be presented for the overlying deposit of shale. As suggested by Garry Stone (personal communication), this deposit may have been, together with layer 6, one in a series of strata deposited during construction of the bastion. Alternatively, the shale may have been deposited during or preparatory to the subsequent use of the fort as a prisoner of war facility. The absence of artifactual material in association with the shale makes possible any number of such hypotheses, the value of which lies in their contribution to the formulation of subsequent archeological research designs for future investigations at Fort Frederick.

Another problem of interpretation is that regarding the nature of the silty grayish brown soil overlying layer 6 in the central area of the southwest bastion (layer 2a). At least a portion of this deposit, that in Square N5E6, for example, appeared possibly to have washed or eroded into its present position, originating in the raised peripheral area. It is with regard to the interpretation of this deposit that the stripping of soil by the CCC has had a particularly negative impact. Here again, however, subsequent bastion excavations at Fort Frederick should have as one objective the recovery of data which would permit an interpretation of this deposit. In any case, the information presently available is of no assistance in attempting a determination of the original elevation of the bastion periphery.

An examination of the profiles recorded by Liesenbein (1975) for a series of



Scale: 1"=1'

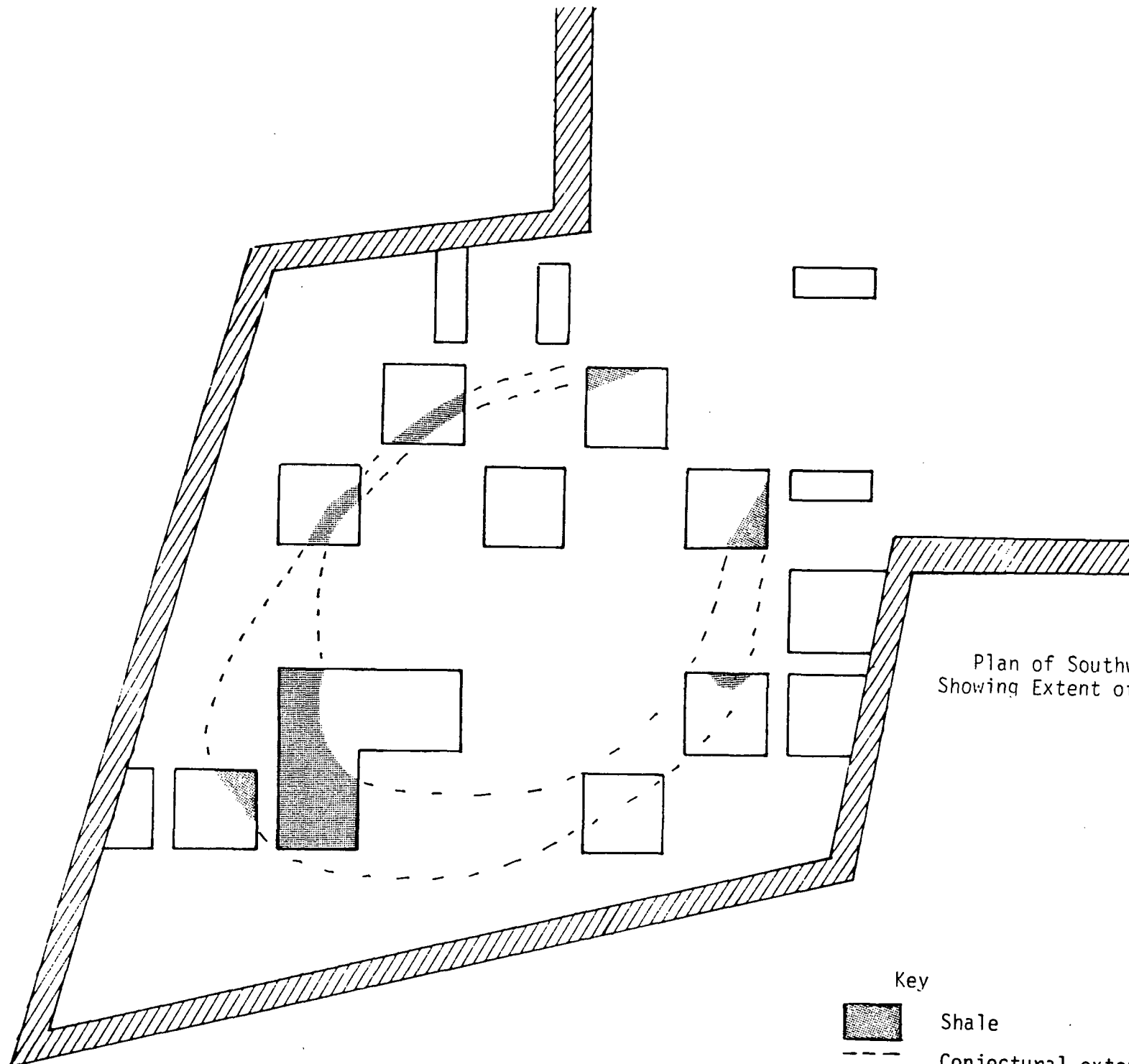


Profile Section Through West Wall of Southwest Bastion
Along North 4 Transect

trenches excavated within the northeast bastion indicates that a raised periphery was present here as well, at least on the east side of the bastion. It is difficult to determine from the soil descriptions, however, whether the periphery of the northeast bastion was initially higher than it appears at present. As in the southwest bastion, it is apparent that a large amount of fill was deposited in the northeast bastion by the CCC subsequent to their extensive trenching activities, these deposits interpreted as such by Liesenbein (1975). The west side of the northeast bastion, however, appears to have lacked the raised periphery, or else a considerable amount of soil removal has taken place. The presence of a level brick feature lying just above sterile subsoil near the point of the northeast bastion also represents a point of distinction between the two bastions.



As noted in Chapter 3, excavations within the southwest bastion revealed evidence which indicates a substantial modification of the peripheral area, this in the form of a layer of shale overlying earlier deposits. The known extent of the shale deposit, together with an estimate of the actual extent of this material, is shown in Figure 25. Since the shale deposit lies immediately beneath modern topsoil in some areas, it may be that the stripping of the surface by the CCC resulted in the removal of a significant amount of shale. An archeological plan map prepared by the CCC in 1934, for example, shows a concentration of shale near the east side of the northeast bastion and, while Liesenbein's (1975:60) excavations likewise revealed a deposit of shale in the same location, this deposit was smaller than that indicated on the CCC map. Figure 24 illustrates rather nicely the relationship of the shale deposit to original peripheral fill soils and to the eighteenth century occupational accumulation (layer 6). Unlike the northeast bastion, the stratigraphic evidence as recorded in the southwest bastion indicates that shale was deposited around the entire perimeter.

At any rate, the evidence recovered thus far in the two bastions indicates a raised periphery surrounding a level and elevationally lower central area. This central area is characterized in the southwest bastion by an organic deposit containing a substantial amount of midden refuse, but no such accumulation appears in the northeast bastion. Given the shallow depth of historic deposits in the latter bastion, the overall impression is one of



Plan of Southwest Bastion
Showing Extent of Shale Deposit

Key

	Shale
	Conjectural extent of shale

extensive soil removal. The presence and extent of layer 6 in the southwest bastion effectively eliminates the possibility of the earlier presence of extensive earth fill in the manner of that which has been placed in the northwest bastion.

Recommendations

With regard to initial project goals, additional information is still required regarding the details of the appearance and construction of any parapets which may once have existed within the bastions of the fort. Given the failure of investigative efforts in the southwest bastion to locate such evidence, the apparent removal of soil from the northeast bastion and the presence of extensive soil deposits in the northwest bastion, it would appear that the southeast bastion remains as the only practical focus for such inquiry. The southeast bastion, moreover, contains several large trees which may have partially protected subsurface deposits and, as Kimmel (personal communication) notes, the fact that this bastion required the least amount of restoration may indicate comparatively little disturbance by the CCC. Future excavation within the southeast bastion should, as noted earlier, be undertaken in such manner as to contribute to the present understanding and interpretation of the stratigraphic sequence around the periphery of the bastion. Especially valuable would be information bearing upon the height of the bastion periphery and the association of the shale deposit with a specific occupation of the fort.

It must also be emphasized here that, despite documentary references to the presence of a powder magazine at Fort Frederick, no such structure has yet been identified archeologically. In conjunction with a documentary reference to a bank of earth thrown up in the northeast bastion (Kimmel: personal communication), the presence of a brick feature near the point of this bastion is deserving of further investigation. Alternatively, of course, excavation of the southeast bastion might prove rewarding in this regard.

Also of interest is the recovery of structural evidence of a guardhouse, an additional feature for which documentary evidence is found (see Bastian 1970:33). While available documentation does not suggest the site of this structure, a common location for guard houses in contemporary forts was to

one side of the main gate, against the curtain wall (see, for example, Hanson and Hsu 1975).

Although the recovery of structural evidence is of direct concern to the continuing restorative effort at Fort Frederick, it seems of equal importance, through the recovery and analysis of artifacts, to determine the loci of particular activities associated with the various occupations of the fort. Such a determination is dependent, of course, upon function and distributional studies of the recovered artifacts.

In regard to the recovery of evidence pertaining to outer fortifications, it may now be necessary to conduct occasional investigations at increasing distances from the walls of the fort. Comparison with extant plans of contemporary eighteenth century forts, together with a consideration of site topography, may also assist in the definition of likely areas for the location of such features as redoubts. The location of foundations of buildings once standing outside the walls of the fort might be located most economically by means of a resistivity survey, thus focusing subsequent excavation upon loci of anomalies within an overall pattern of soil conductivity values. Alternatively, a magnetometer survey might also prove rewarding in terms of the location of archeological features.

As a concluding statement, the necessity for a comparison of the results of future investigations with the data from investigations already concluded cannot be too strongly emphasized. Aside from the discovery and identification of the remains of specific structures, comparative analysis of artifacts, strata and features will undoubtedly provide the most useful information for an understanding of the original appearance of Fort Frederick and its various patterned activities. Considerations of time and funding will undoubtedly limit future investigations to the seasonal excavation of specific locational foci, and these projects should be planned so as to best utilize and test the data and hypotheses generated during earlier excavations. A number of areas at Fort Frederick, both interior and exterior, may be suggested as likely subjects for future excavation: the remaining bastions, the officer's quarters, the areas adjacent to the main gate, the parade ground, the areas behind the east and west barracks, the area west of the fort and the area

south of the fort.

Hopefully, this report has served to illustrate two important factors regarding the potential for future archeological investigations at Fort Frederick. First, while previous work at the fort, particularly that undertaken by the CCC, has undeniably occasioned severe subsurface disturbance, these disturbances have not precluded all possible contributions of archeological investigations to an understanding of the appearance and utilization of Fort Frederick. Second, even in the absence of subsurface structural features (as in the southwest bastion), significant archeological contributions are possible in terms of a determination of the location of specific activities and an interpretation of the appearance of the fort. In sum, there is every reason to encourage additional archeological investigations at Fort Frederick and to anticipate interesting and significant results.

Bibliography

BIBLIOGRAPHY

- Bastion, Tyler
1970 Tentative Program for Archeological Research at Fort Frederick, Maryland. Manuscript.
- Grimm, Jacob
1970 Archeological Investigation of Fort Ligonier. Annals of the Carnegie Museum, Volume 42. Pittsburgh, Pennsylvania.
- Guilday, John E.
1963 Evidence for Buffalo in Prehistoric Pennsylvania. Pennsylvania Archeologist XXXIII(3):135-140.
- Hanson, Lee and Dick Ping Hsu
1975 Casemates and Cannonballs: Archeological Investigations at Fort Stanwix National Monument. U. S. Department of the Interior, National Park Service, Publications in Archeology 14.
- Harris, Edward C.
1975 The Stratigraphic Sequence: A Question of Time. World Archaeology 7(1):109-121.
- Israel, Stephen
1975 Archeological Investigation of the East and West Barracks at Fort Frederick State Park, Washington County, Maryland. Manuscript prepared for the Maryland Bicentennial Commission.
- Kimmel, Ross M.
1973 Fort Frederick Restoration: Report on Historical Research. Manuscript.
- Liesenbein, William
1975 Report on the Preliminary Archaeological Investigation of the Southwest and Northeast Bastions of Fort Frederick Conducted in October, 1973. Manuscript.
- Miller, J. Jefferson II, and Lyle M. Stone
1970 Eighteenth Century Ceramics from Fort Michilimackinac. Smithsonian Studies in History and Technology, Number 4. Washington, D.C.
- National Heritage Corporation
1977 Bethlehem Pottery and Forge: an Archeological Investigation. Manuscript prepared for the City of Bethlehem, Pennsylvania.

Nelson, Lee

- 1968 Nail Chronology as an Aid to Dating Old Buildings. History News 24(11).

Noel Hume, Ivor

- 1970 A Guide to Artifacts of Colonial America. Alfred A. Knopf, New York.

Porter, Charles W.

- 1936 Progress Report on Fort Frederick, SP-1, Maryland. Manuscript.

South, Stanley

- 1964 Analysis of the Buttons from Brunswick Town and Fort Fisher. The Florida Anthropologist XVII (2):113-133.
- 1972 Evolution and Horizon as Revealed in Ceramic Analysis in Historical Archeology. The Conference on Historic Site Archeology Papers, 1971. Volume 6, Part 1, pages 71-116.
- 1974 Palmetto Parapets: Exploratory Archeology at Fort Moultrie, South Carolina, 38CH50. University of South Carolina Institute of Archeology and Anthropology, Anthropological Studies Number 1. Columbia, South Carolina.
- 1977 Method and Theory in Historical Archeology. Academic Press, New York.

Strandberg, Carl H.

- 1974 Fort Frederick Photoarchaeological Study. Manuscript prepared for the Maryland Department of Natural Resources.

Stone, Lyle M.

- 1974 Fort Michilimackinac 1715-1781: An Archaeological Perspective on the Revolutionary Frontier. Michigan State University, Publications of the Museum, Anthropological Series, Volume 2. Lansing, Michigan.

Stotz, Charles M.

- 1974 The Reconstruction of Fort Ligonier: The Anatomy of a Frontier Fort. Bulletin of the Association for Preservation Technology VI(4).

Witthoft, John

- 1966 A History of Gunflints. Pennsylvania Archaeologist 36(1-2): 12-49.

Plates

Plate 1: Overview of the interior of the southwest bastion, facing south, showing the excavations in progress. Squares N4E5 and N4E4 appear at upper right, square N7E7 at lower left of photo, while flagpole supports appear at left center.

Plate 2: Square N4E5, east face, showing strata sloping toward center of bastion. A concentration of shale appears near the surface, while layer 6 appears as a dark stain intersecting the scale rod at a height of about ten inches (rod divided in intervals of one foot).

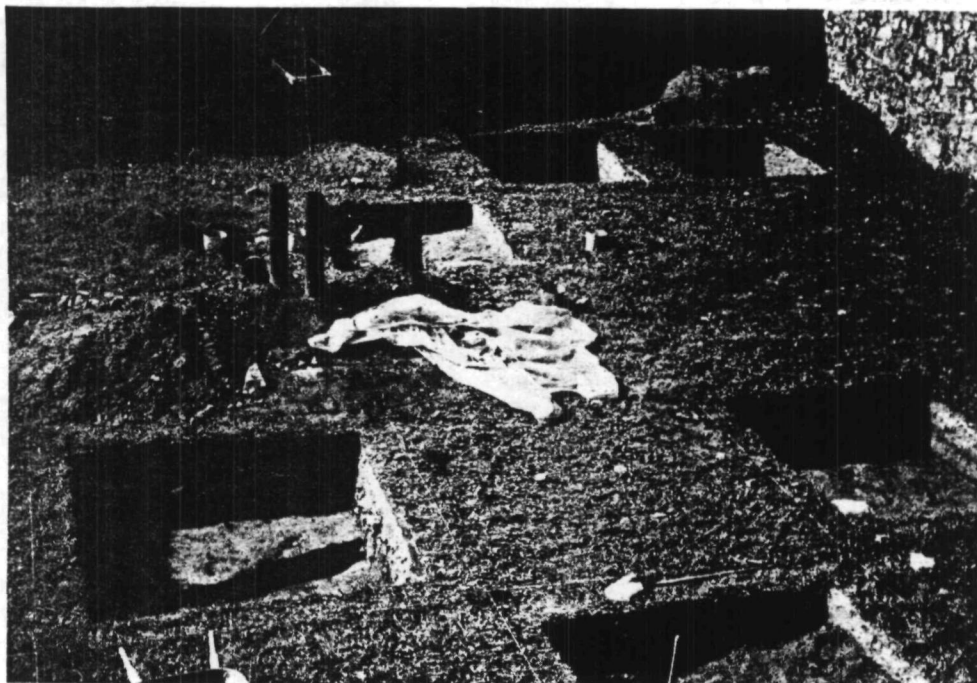


Plate 3: Square N7E7, east half of unit facing south, showing surface of layer 6 and crisscrossing CCC trenches. Heavy deposit of stone rubble from CCC activities appears in south face of square, immediately above layer 6.

Plate 4: Squares N5E10 (top) and N6E10 (bottom), showing linear depressions (feature 9) in surface of sterile subsoil (layer 9). Large pit-like disturbance can be seen in square N6E10, while the stepped footing for the bastion wall can be seen along the west edge of each unit.



Plate 5: Detail of the layer 6 midden deposit in square N5E6 adjacent to two CCC trenches. Camera facing West.

Plate 6: North Trench 1, prior to its extension by backhoe, showing the absence of cultural deposits.



Plate 7: West Trench 1 in the process of backhoe excavation with close archeological monitoring.

Plate 8: Detail of the north face of West Trench 1 showing dark macadam lens overlying deposits of rubble and mortar.

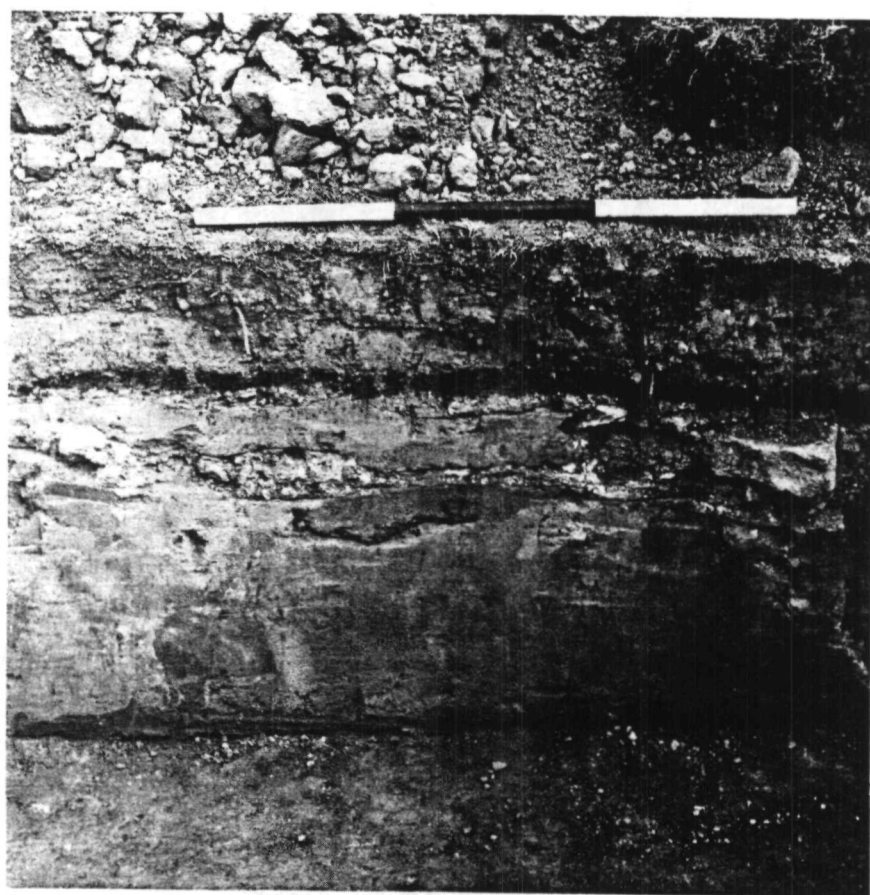
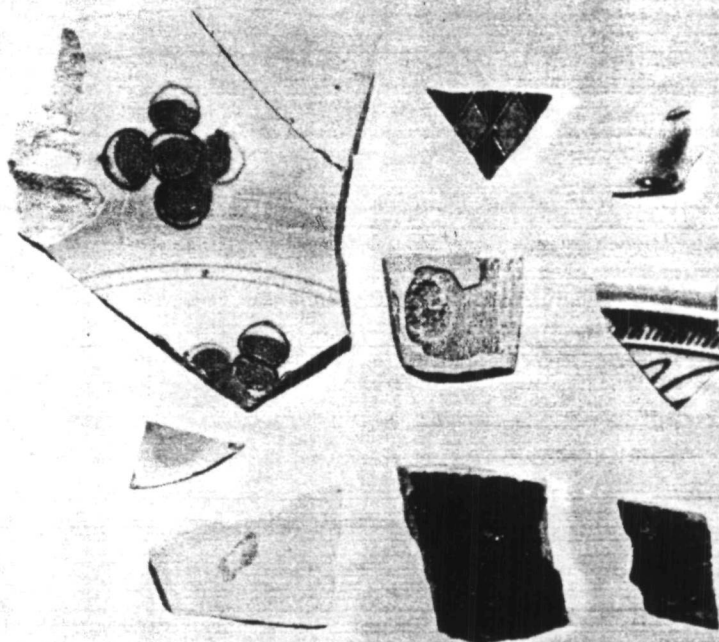


Plate 9: Clipped silver coin recovered in layer 6, square N5E6, dated 1732 and probably minted in England for use in the Irish colonies. Scale in tenths of an inch.

Plate 10: Various ceramic fragments from layer 6 in the southwest bastion: top row - delftware plate fragment, Westerwald blue stoneware, porcelain cup handle fragment; center row - delftware, scratch-blue saltglaze stoneware bowl or cup fragment; bottom row - two fragments of plain white saltglaze stoneware, two fragments of redware with dark brown glaze.



Appendices

APPENDIX A

Descriptive and Interpretive Listing of Excavated Strata

1. The Southwest Bastion

Layer	Soil Description	Munsell Color	Interpretation
1	gray humic topsoil	10YR 3/2	topsoil accumulation, 1934 to present
1a	orange-brown topsoil	10YR 4/4	spoil dirt from 1973
1b	yellowish brown friable soil	10YR 5/4	CCC trench fill
1c	yellowish brown friable soil	10YR 5/4	1973 backhoe trench fill
2	shale	NA	concentration of shale deposited around bastion periphery subsequent to initial occupation
2a	light brown sandy soil	10YR 4/4	possible erosional or leveling fill soil, probably subsequent to eighteenth century occupation
2b	light gray-brown soil	10YR 4/3	possible erosional or leveling fill soil, probably subsequent to eighteenth century occupation
2c	light brown soil	10YR 6/6	same as 2b, but separating two lenses of shale in east wall of square N4E5
2e	brownish yellow soil	10YR 6/6	same as 2b
2f	light brown sandy soil	10YR 4/4	same as 2a
2g	light brown loam	10YR 4/3	same as 2a
2h	light brown soil	10YR 6/6	same as 2a
2i	reddish brown clay	5YR 4/8	clay fill deposited by CCC
2j	orange-brown clay	10YR 6/6	clay fill deposited by CCC
2k	light brown soil with mortar	10YR 5/4	deposited as fill by CCC

Layer	Soil Description	Munsell Color	Interpretation
3	brown soil with brick rubble	10YR 5/4	layer deposited subsequent to initial fort occupation, but prior to deposition of shale
3a	reddish yellow clayey soil	7.5YR 6/6	overlying but deposited at about same time as layer 3
3b	yellowish brown soil	10YR 5/8	deposit occurring immediately beneath shale in some areas
4	grayish soil	10YR 4/3	deposited subsequent to initial fort occupation, but prior to layer 3
5	light brown mottled soil with brick rubble	10YR 4/4	deposited subsequent to initial fort occupation, but prior to layer 4
5a	reddish yellow soil	7.5YR 6/6	deposited subsequent to initial fort occupation, but prior to layer 4a
6	gray-brown soil	10YR 3/3	organic accumulation from initial fort occupation
7	brownish soil	7.5YR 5/6	sterile fill in bastion periphery from initial fort construction
7a	light tan soil	10YR 4/4	sterile fill in bastion periphery from initial fort construction
7c	yellowish red clayey	5YR 4/8	sterile fill in bastion periphery from initial fort construction
8	gray humus	10YR 3/1	humic surface predating construction of fort
8a	light gray soil	10YR 4/3	sterile fill in bastion periphery from initial fort construction, immediately overlying layer 8
8b	light gray clayey sand	NA	transitional staining between layers 8 and 9
8c	yellow-brown soil	10YR 5/4	sterile fill in bastion periphery from initial fort construction
9	tan subsoil	10YR 5/4	culturally sterile subsoil

2. West Trenches 1 - 5

Layer	Soil Description	Munsell Color	Interpretation
100	pale brown humic topsoil	10YR 6/3	modern topsoil, most of which has accumulated since 1934
100a	light yellow-brown silty clay	10YR 6/4	
100b	black macadam lens	NA	probable early twentieth century road surface
100c	brown silty clay	10YR 5/3	
100d	pale brown silty clay	10YR 6/3	
100e	yellow-brown silty clay with mortar	10YR 5/6	
100f	yellow-brown silty clay	10YR 5/4	
100g	mortar concentration	NA	
100h	very pale brown clayey silt	10YR 7/4	
100i	brown sandy clay	10YR 4/3	
100j	dark gray cinder lens	2.5Y 3/0	
100k	yellow-brown clay	10YR 5/6	
100l	brown humus	10YR 6/5	
100m	dark yellowish brown	10YR 4/4	
100n	grayish brown soil	10YR 5/2	
100o	light grayish brown soil	10YR 5/4	
100p	gray clay	NA	
100q	light tan soil with mortar	10YR 6/1	
100r	yellow brown soil with charcoal	10YR 5/6	
100s	light brown clay	7.5YR 6/4	
100t	gray-brown silty clay	10YR 5/2	
100u	very dark gray sand	10YR 3/1	
100w	trench	NA	
100x	dark brown stoney soil	NA	
100y	brownish yellow clay	10YR 6/6	
100z	yellowish red clay	5YR 5/6	
101	light brownish gray topsoil	10YR 6/3	

<u>Layer</u>	<u>Soil Description</u>	<u>Munsell Color</u>	<u>Interpretation</u>
1011	brown soil with mortar	10YR 5/6	
102	dark yellow-brown soil	10YR 4/4	
103	dark yellow-brown soil	10YR 4/4	
104	dark yellow-brown soil	10YR 4/4	
105	brown soil with mortar	10YR 4/4	
106	brown soil with mortar	10YR 5/4	
107	yellow-brown clay	10YR 5/6	
108	pale brown soil	10YR 6/3	
200	yellow-brown clayey sand	10YR 5/6	sterile subsoil
201	yellow-brown clay	10YR 5/6	sterile subsoil

Appendix B

Analysis of Faunal Remains of Southwest Bastion (Layer 6)

Key: C/F: complete (or) fragmentary
 C = complete
 F = fragmentary

Butchering: CT = completely cut in two
 C = cut marks only
 N = none

Teeth: I = incisor
 C = canine
 P = premolar
 M = molar

superscript = upper; subscript = lower

e.g. M^1 = upper first molar
 M_2 = lower first molar
 M_x = lower molar, position indeterminant

Immature long bones: (shaft only) indicates epiphyseal cap is not present

Minimum Numbers of Individuals:

<u>Excavation Unit</u>	<u>Bos taurus</u>	<u>Sus scrofa</u>
N5E6	2 mature 4 immature <u>6</u>	4 mature 3 immature 1 infant <u>8</u>
N5E5/N5E6	2 mature 3 immature <u>5</u>	2 mature 2 immature 2 infant <u>6</u>
N5E6 and N5E5/N5E6 together	3 mature 6 immature <u>9</u>	4 mature 3 immature 2 infant 1 ? <u>10</u>

Fort Frederick
Excavation Unit N5E6, Layer 6

Bos taurus (domestic cow)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	?	--	horn core	F	N	mat
1	?	--	mandible, gonial angle	F	N	?
1	?	--	mandible, gonial angle	F	CT	?
1	R	--	mandible $\subseteq P_4 - M_3$	F	N	mat
1	R	--	I ₁	C	N	mat
1	R	--	I ₁	C	N	old
1	?	--	I _x	C	N	mat
1	R	--	P ₃	C	N	mat
1	R	--	M ₁	C	N	old
1	-	--	atlas	C	N	imm
1	-	--	atlas	F	N	?
2	-	--	axis	F	N	?
2	-	--	cervical vertebra	C	N	imm
1	-	--	cervical vertebra (body only)	F	N	mat
5	-	--	cervical vertebra	F	N	?
1	-	--	cervical vertebra	F	CT	?
2	-	--	cervical vertebra (disc only)	F	N	imm
2	-	--	thoracic vertebra	C	N	imm
1	-	--	thoracic vertebra	C	CT	imm
1	-	--	thoracic vertebra	C	N	mat
1	-	--	thoracic vertebra (body only)	F	N	imm
1	-	--	thoracic vertebra (body only)	F	N	sub-adult
1	-	--	thoracic vertebra (rib facet)	F	N	?
7	-	--	thoracic vertebra (spine only)	F	N	?
1	-	--	thoracic vertebra (spine only)	F	CT	imm
3	-	--	thoracic vertebra (disc only)	F	N	imm
2	-	--	lumbar vertebra	C	CT	mat
1	-	--	lumbar vertebra	C	N	mat
2	-	--	lumbar vertebra	C	CT	imm
7	-	--	lumbar vertebra	C	N	imm.
2	-	--	lumbar vertebra (body only)	F	CT	mat
3	-	--	lumbar vertebra (body only)	F	N	mat
1	-	--	lumbar vertebra (body only)	F	CT	sub-adult
4	-	--	lumbar vertebra (body only)	F	CT	imm
3	-	--	lumbar vertebra (body only)	F	N	imm
3	-	--	lumbar vertebra (spine only)	F	C	?
11	-	--	lumbar vertebra (spine only)	F	N	?
4	-	--	lumbar vertebra	F	CT	imm
4	-	--	lumbar vertebra	F	CT	?
13	-	--	lumbar vertebra	F	N	?
12	-	--	lumbar vertebra (disc only)	F	N	imm
1	-	--	caudal vertebra	C	N	imm

Excavation Unit N5E6, Layer 6

Bos taurus (continued)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	-	--	caudal vertebra	F	N	mat
30	-	--	vertebral discs	F	N	imm
1	-	--	sacral vertebra	F	CT	mat
1	-	--	sacral vertebra	F	N	mat
1	-	--	sacral vertebra	F	CT	imm
5	-	--	sacral vertebra	F	N	imm
2	-	--	sacral vertebra	F	N	?
4	-	--	rib	F	N	mat
6	-	--	rib	F	N	imm
78	-	--	rib	F	N	?
14	-	--	rib cartilage (ossified)	F	N	mat
4	-	--	sternebra	C	N	?
9	-	--	sternebra	F	N	?
1	-	--	sternebra, burned	F	N	?
1	L	--	scapula, acromion process	F	CT	mat
2	R	--	scapula, acromion process	F	N	mat
1	L	--	scapula	F	N	?
1	R	--	scapula	F	CT	?
1	R	--	scapula	F	N	imm
1	?	--	scapula	F	N	?
1	R	dist	humerus	F	CT	mat
1	R	dist	humerus	F	N	?
1	L	prox	radius	F	CT	?
1	L	prox	radius	F	N	?
1	R	prox	radius	F	CT	?
1	R	prox	radius	F	N	?
1	L	dist	radius	F	N	mat
1	R	dist	radius (shaft & cap)	F	N	imm
1	L	prox	ulna	F	N	?
1	L	prox	ulna	F	CT	imm
1	L	prox	ulna (cap only)	F	N	imm
1	R	prox	ulna	F	N	?
2	L	--	pelvis (ilium)	F	N	?
1	L	--	pelvis (ilium & acetabulum)	F	N	?
1	L	--	pelvis (acetabulum)	F	N	?
2	R	--	pelvis (ilium)	F	N	?
1	L	--	pelvis (ischium)	F	N	?
2	R	--	pelvis (ischium & acetabulum)	F	CT	?
1	R	--	pelvis (ischium)	F	N	?
1	?	--	pelvis	F	N	?
2	L	prox	femur (shaft only)	F	N	imm
1	R	prox	femur	F	N	young adult
1	R	prox	femur (cap only)	F	N	imm
1	L	dist	femur	F	N	?
2	L	dist	femur (cap only)	F	N	imm

Excavation Unit N5E6, Layer 6

Bos taurus (continued)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	L	shaft	femur	F	N	?
1	L	prox	tibia (cap only)	F	N	imm
1	R	prox	tibia (cap only)	F	N	imm
1	R	prox	tibia (shaft only)	F	N	imm
1	L	dist	tibia	F	CT	mat
1	L	dist	tibia	F	N	mat
1	L	dist	tibia (shaft only)	F	N	imm
1	R	dist	tibia	F	N	mat
4	L	prox	metacarpal	F	N	?
1	R	prox	metacarpal	F	N	?
3	L	prox	metatarsal	F	N	?
2	R	prox	metatarsal	F	N	?
1	?	dist	metapodial	F	N	mat
1	?	dist	metapodial (cap only)	F	N	imm
1	R	--	radial carpal	C	N	?
2	L	--	intermediate carpal	C	N	?
3	L	--	ulnar carpal	C	N	?
3	R	--	ulnar carpal	C	N	?
1	R	--	fused 2nd & 3rd carpal	C	N	?
2	L	--	4th carpal	C	N	?
1	R	--	4th carpal	C	C	?
1	L	--	astragalus	C	CT	?
1	L	--	astragalus	C	N	?
1	L	--	astragalus	F	CT	?
1	R	--	astragalus	F	CT	?
1	L	--	calcaneum	F	C	?
1	R	--	calcaneum	C	N	?
1	L	--	lateral malleolus	C	N	?
2	L	--	fused central & 4th tarsals	C	N	?
1	L	--	fused central & 4th tarsals	F	N	?
1	R	--	fused central & 4th tarsals	C	N	?
4	?	--	1st phalanx	C	N	mat
1	?	dist	1st phalanx	F	N	?
1	?	prox	1st phalanx	F	N	imm
1	?	--	2nd phalanx	C	N	mat
4	?	--	3rd phalanx	C	N	mat
2	?	prox	3rd phalanx	F	N	mat
1	?	dist	3rd phalanx	F	N	?
1	?	--	proximal sesamoid	C	N	?
2	?	--	distal sesamoid	C	N	?

Excavation Unit N5E6, Layer 6

Bovidae (Bison bison/Bos taurus)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	R	--	horn core	C	N	mat
2	-	--	cervical vertebra	C	N	imm
2	-	--	thoracic vertebra	C	N	imm
2	-	--	thoracic vertebra (spine only)	F	C	?
1	-	--	thoracic vertebra (spine only)	F	N	?
1	-	--	thoracic vertebra	F	CT	?
1	-	--	thoracic vertebra	F	N	?
1	-	--	lumbar vertebra (disc only)	F	N	imm
4	-	--	rib	F	N	?
2	-	--	sternebra	F	N	?
2	R	--	scapula (acromion process)	F	N	mat
1	L	dist	humerus	F	C	?
1	L	prox	radius	F	N	?
1	R	prox	radius	F	CT	?
1	L	dist	radius (cap only)	F	N	imm
1	R	dist	radius (shaft and cap)	F	N	imm
1	R	--	pelvis (acetabulum and ischium)	F	N	?
1	L	dist	femur (cap only)	F	N	imm
1	L	shaft	femur	F	N	?

27

Ovis aries (domestic sheep)

1	L	--	astragalus	C	N	?
1	L	prox	metacarpal	F	N	?
1	L	prox	metatarsal	F	N	?

Bovid (Ovis/Capra)

1	-	--	axis	F	CT	?
1	R	prox	ulna	F	N	?
1	R	dist	ulna	F	N	?
1	L	dist	tibia	F	N	mat

Odocoileus virginianus (white-tailed deer)

1	L	dist	radius	F	N	imm
1	R	dist	radius (shaft only)	F	N	imm

Excavation Unit N5E6, Layer 6

Bovid/Cervid (Ovis/Capra/Odocoileus)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	R	prox	ulna (shaft only)	F	N	imm
1	R	dist	femur (shaft only)	F	N	imm

Artiodactyl (Bovid/Cervid/Suid)

1	?	--	cheek tooth (P or M0	F	N	?
1	-	--	rib cartilage (ossified)	F	N	mat
1	?	dist	metapodial (condyle only)	F	N	imm

Sus scrofa (domestic pig)

1	L	--	skull (parietal)	F	N	?
1	L	--	skull (parietal, squamosal, & rear edge of frontal)	F	N	?
2	R	--	skull (parietal)	F	N	?
1	L	--	skull (squamosal)	F	N	?
1	L	--	skull (frontal)	F	N	?
2	L	--	skull (occipital condyle)	F	N	?
1	L	--	skull (paroccipital process)	F	N	?
1	R	--	skull (occipital condyle and paroccipital process)	F	N	?
1	?	--	skull (nasal/frontal)	F	N	?
1	?	--	skull	F	N	?
1	R	--	skull (parietal/occipital suture)	F	N	?
1	L	--	maxilla \underline{c} P ⁴ , M ² (sockets P ³ , M ¹)	F	N	mat
1	L	--	maxilla \underline{c} P ² -P ⁴	F	N	mat
1	L	--	maxilla \underline{c} P ¹ -P ² (socket P ³)	F	N	mat
1	L	--	premaxilla (sockets I ¹ -I ³)	F	N	mat
1	R	--	maxilla \underline{c} P ⁴ , M ² , M ³ (sockets P ³ , M ¹)	F	N	mat
1	R	--	maxilla (sockets P ² , C ¹)	F	N	mat
1	R	--	maxilla \underline{c} P ³ , P ⁴ , M ¹ -M ³	F	CT	mat
1	R	--	maxilla (socket C ¹)	F	N	mat

Excavation Unit N5E6, Layer 6

Sus scrofa (continued)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	R	--	premaxilla (sockets I ¹ -I ³)	F	N	mat
1	L	--	maxilla (socket C ¹)	F	N	mat
1	R	--	maxilla (socket I ³)	F	N	mat
1	R	--	maxilla \subseteq P ⁴	F	N	mat
2	L	--	C ₁ ¹	C	N	mat
2	R	--	C ₃	C	N	mat
1	L	--	P ₃	C	N	mat
1	R	--	P ₄	C	N	mat
1	L	--	P ₄	C	N	mat
1	R	--	P ₁	C	CT	young ad.
1	L	--	M ₂	C	N	old
1	L	--	M ₂	C	N	mat
1	L	--	M ₂	C	N	?
1	R	--	M ₂	C	N	?
1	R	--	M ₃	C	N	mat
2	R	--	M ₃	C	N	mat
1	R	--	M ₃	C	N	imm
1	L	--	mandible \subseteq P ₁ -P ₄)	F	N	mat
1	L	--	mandible (articular condyle)	F	N	?
1	L,R	--	mandible L \subseteq C ₁ , P ₄ , M ₁ -M ₃ (sockets P ₂ , P ₃); R \subseteq C ₁ , P ₂ -P ₃	F	N	mat
1	L,R	--	mandible L \subseteq I ₁ , I ₂ (sockets I ₃ C ₁ , P ₁ ; R \subseteq I ₁ , I ₂ (socket I ₃))	F	N	mat
1	R	--	mandible \subseteq I ₂ , C ₁ , P ₃ (sockets I ₃ , P ₂ , P ₄)	F	N	mat
1	R	--	mandible \subseteq P ₃ , P ₄	F	N	mat
1	?	--	maxilla/mandible (molar socket)	F	N	?
2	L	--	I ₁	C	N	mat
3	R	--	I ₁	C	N	mat
3	L	--	I ₂	C	N	mat
1	R	--	I ₂	C	N	mat
1	L	--	I ₃	C	N	mat
1	R	--	I ₃	C	N	mat
1	?	--	I ₃	C	N	?
1	L	--	C ₁	C	N	mat
1	R	--	C ₁	C	N	mat
1	R	--	C ₁	C	N	young ad.

Excavation Unit N5E6, Layer 6

Sus scrofa (continued)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
2	R	--	P ₄	C	N	mat
1	R	--	M ₃ , burned	C	N	mat
1	L	--	M ₃	F	N	mat
1	?	--	C _x	F	N	mat
1	-	--	atlas	C	CT	mat
1	-	--	atlas	C	CT	?
2	-	--	atlas	C	N	?
1	-	--	axis	C	N	imm
1	-	--	axis (body only)	F	N	mat
1	-	--	axis	F	N	?
2	-	--	cervical vertebra	C	N	imm
1	-	--	cervical vertebra	F	CT	imm
2	-	--	cervical vertebra	F	N	imm
1	-	--	cervical vertebra	F	N	?
1	-	--	cervical vertebra (burned)	F	N	?
3	-	--	thoracic vertebra	C	N	imm
2	-	--	thoracic vertebra (spine)	F	N	?
2	-	--	thoracic vertebra	F	C	imm
1	-	--	thoracic vertebra	F	N	imm
1	-	--	lumbar vertebra	C	N	mat
2	-	--	lumbar vertebra	C	N	sub-adult
4	-	--	lumbar vertebra	C	N	imm
7	-	--	lumbar vertebra (spine only)	F	N	?
2	-	--	lumbar vertebra (disc only)	F	N	imm
1	-	--	sacral vertebra (disc only)	F	N	imm
1	-	--	vertebra	F	CT	imm
2	-	--	vertebra	F	N	imm
2	-	--	vertebra	F	CT	?
1	-	--	vertebra	F	N	?
3	-	--	vertebra (disc only)	F	N	imm
1	L	--	scapula (blade)	F	N	?
1	R	--	scapula (acromion process)	F	CT	?
1	L	prox	humerus	F	N	mat
1	L	dist	humerus	F	CT	mat
3	L	dist	humerus	F	N	mat
1	L	dist	humerus	F	CT	imm
1	L	dist	humerus	F	N	?
1	R	--	radius (missing distal cap)	C	N	imm
1	L	prox	radius	F	N	?
2	L	prox	ulna	F	N	?
3	R	prox	ulna	F	N	imm
1	R	prox	ulna	F	CT	?
1	R	dist	ulna	F	N	imm
2	L	--	pelvis (ischium)	F	N	imm
1	L	--	pelvis (acetabulum, ilium, and ischium)	F	N	imm

Excavation Unit N5E6, Layer 6

Sus scrofa (continued)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	L	--	pelvis (acetabulum, ilium, ischium, and pubis)	F	N	?
1	R	--	pelvis (acetabulum)	F	N	?
1	R	--	pelvis (acetabulum and ilium)	F	N	?
1	R	--	pelvis (acetabulum, pubis, and ischium)	F	N	?
1	L	dist	femur	F	N	imm
1	R	prox	femur	F	N	mat
1	R	prox	femur (cap only)	F	N	imm
1	R	dist	femur (cap only)	F	N	imm
1	R	dist	femur (shaft only)	F	N	imm
1	L	--	tibia	C	N	infant
2	L	prox	tibia	F	N	imm
1	R	--	astragalus	C	N	?
1	R	--	calcaneum	F	N	mat
2	L	--	central tarsal	C	N	?
1	L	prox	3rd metacarpal	F	N	mat
1	L	--	3rd metacarpal (missing condyle)	C	N	imm
1	L	--	3rd metacarpal (missing condyle)	C	N	infant
1	L	--	4th metacarpal (missing condyle)	C	N	sub-adult
1	R	prox	4th metacarpal	F	N	imm
1	R	--	4th metacarpal (missing condyle)	C	N	infant
1	?	dist	metacarpal (shaft only)	F	N	infant
1	R	prox	3rd metatarsal	F	N	mat
2	?	shaft	metapodial	F	N	?
1	?	dist	metapodial (condyle only)	F	N	imm
1	?	dist	metapodial	F	N	mat
2	?	--	1st phalanx, digit 3/4	C	N	mat
3	?	--	1st phalanx, digit 3/4	C	N	imm
1	?	--	2nd phalanx, digit 3/4	C	N	mat
2	?	--	3rd phalanx, digit 3/4	C	N	mat
2	?	--	3rd phalanx, digit 3/4	C	N	?
1	?	--	3rd phalanx, digit 3/4	F	N	mat
1	?	--	1st phalanx, digit 2/5	C	N	mat
2	?	--	1st phalanx, digit 2/5	C	N	imm
2	?	--	2nd phalanx, digit 2/5	C	N	imm

181

Small Carnivore

1	?	--	maxilla	F	N	?
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Excavation Unit N5E6, Layer 6

Sciurus niger (fox squirrel)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	L	--	mandible \underline{c} I_1 (sockets P_4 , M_1 - M_3)	F	N	mat
1	R	--	femur	C	N	mat

Sciurus spp. (S. niger/S. carolinensis)

1	L	dist	tibia	F	N	mat
1	R	dist	tibia	F	N	mat

Melleagris gallopavo (wild or domestic turkey)

1	-	--	cervical vertebra	C	N	mat
---	---	----	-------------------	---	---	-----

Branta canadensis (Canada goose)

1	R	shaft	humerus	F	N	mat
---	---	-------	---------	---	---	-----

Medium-sized Bird

1	L	dist	ulna	F	N	?
1	L	shaft	tibiotarsus	F	N	?

Large fish

1	-	--	skull	F	N	?
---	---	----	-------	---	---	---

Unidentified fragments - Large Mammal

33	-	--	skull		N	?
2	-	--	skull (maxilla)		N	?
1	-	--	molar		N	?
5	-	--	tooth		N	?
1	-	--	thoracic vertebra (spine)		N	?
2	-	--	vertebra (body)		N	imm
3	-	--	vertebra (disc)		N	imm
4	-	--	vertebra		N	?
3	-	--	vertebra		N	imm
3	-	--	rib		N	mat

Excavation Unit N5E6, Layer 6

Unidentified fragments - Large Mammal (continued)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
3	-	--	rib, burned		N	imm
6	-	--	rib		N	imm
1	-	--	rib, burned		CT	?
5	-	--	rib, burned		N	?
91	-	--	rib		N	?
1	-	--	long bone		CT	mat
1	-	--	long bone		N	imm
2	-	--	long bone, burned		CT	?
15	-	--	long bone		CT	?
16	-	--	long bone, burned		N	?
67	-	--	long bone		N	?
1	?	--	scapula		N	?
2	?	--	pelvis (acetabulum)		N	?
1	?	--	carpal element (complete)		N	?
1	?	--	carpal element		N	?
3	-	--	unidentified fragment		CT	imm
82	-	--	unidentified fragment		N	imm
2	-	--	unidentified fragment		N	infant
35	-	--	unidentified fragment		CT	?
23	-	--	unidentified fragment		N	?
537	-	--	unidentified fragment		N	?
952						

Unidentified Fragments - Small Mammal

2	?	prox	metapodial		N	mat
---	---	------	------------	--	---	-----

Unidentified Fragments - Small Mammal/Bird

1	?	--	long bone		N	imm
---	---	----	-----------	--	---	-----

Unidentified Fragments

7	-	--	---		N	imm
5	-	-	--- , burned		N	?
62	-	--	---		N	?
74						

Fort Frederick
Excavation Unit N5E5/N5E6, Layer 6

Bos taurus (domestic cow)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
3	?	--	horn core	F	N	mat
1	R	--	skull (paroccipital process)	F	N	?
1	R	--	skull (occipital condyle and paroccipital process)	F	N	?
1	L	--	mandible (articular condyle)	F	N	?
1	R	--	mandible (articular condyle)	F	N	?
2	?	--	mandible (ramus)	F	N	?
1	R	--	I _x	C	N	mat
1	-	--	atlas	C	C	?
1	-	--	atlas	C	N	?
1	-	--	cervical vertebra	C	N	mat
2	-	--	cervical vertebra	C	CT	imm
1	-	--	cervical vertebra	C	N	imm
6	-	--	cervical vertebra	F	N	?
1	-	--	cervical vertebra (disc only)	F	N	imm
2	-	--	thoracic vertebra	C	N	mat
1	-	--	thoracic vertebra	C	CT	imm
2	-	--	thoracic vertebra	C	C	imm
2	-	--	thoracic vertebra	C	N	?
1	-	--	thoracic vertebra (body only)	F	CT	mat
3	-	--	thoracic vertebra (body only)	F	N	imm
3	-	--	thoracic vertebra (spine only)	F	C	?
1	-	--	thoracic vertebra (spine only)	F	N	?
3	-	--	thoracic vertebra	F	N	?
5	-	--	thoracic vertebra (disc only)	F	N	imm
1	-	--	lumbar vertebra	C	C	mat
4	-	--	lumbar vertebra	C	N	mat
4	-	--	lumbar vertebra	C	CT	imm
4	-	--	lumbar vertebra	C	C	imm
1	-	--	lumbar vertebra	C	N	imm
1	-	--	lumbar vertebra	C	CT	?
3	-	--	lumbar vertebra	C	N	?
1	-	--	lumbar vertebra (body only)	F	N	imm
1	-	--	lumbar vertebra (spine only)	F	CT	?
1	-	--	lumbar vertebra (spine only)	F	C	?
2	-	--	lumbar vertebra (spine only)	F	N	?
7	-	--	lumbar vertebra	F	N	?
9	-	--	lumbar vertebra (disc only)	F	N	imm
1	-	--	vertebra (body only)	F	N	imm
2	-	--	vertebra (disc only)	F	N	imm
3	-	--	sacral vertebra	F	N	mat
1	-	--	sacral vertebra	F	CT	imm
6	-	--	sacral vertebra	F	N	imm
1	-	--	sacral vertebra	F	CT	?

Excavation Unit N5E5/N5E6, Layer 6

Bos taurus (continued)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	-	--	sacral vertebra	F	N	?
2	-	--	sacral vertebra (disc only)	F	N	imm
1	-	--	rib	F	C	imm
3	-	--	rib	F	N	imm
1	-	--	rib	F	CT	?
2	-	--	rib	F	C	?
66	-	--	rib	F	N	?
1	-	--	rib cartilage (ossified), burned	F	N	mat
4	-	--	rib cartilage (ossified)	F	N	mat
1	-	--	sternebra	C	N	?
1	-	--	sternebra	F	N	?
2	L	--	scapula (acromion process)	F	N	?
1	R	--	scapula (acromion process)	F	N	?
1	R	--	scapula (blade)	F	CT, C	?
1	R	--	scapula (blade)	F	C	?
1	R	prox	humerus (cap only)	F	N	imm
1	R	dist	humerus	F	C	mat
1	L	shaft	humerus	F	C	?
3	L	prox	radius	F	N	?
2	R	prox	radius	F	N	?
1	L	dist	radius (cap only)	F	N	imm
1	R	prox	fused radius and ulna	F	N	mat
1	R	prox	ulna	F	N	mat
1	R	prox	ulna (shaft only)	F	N	imm
2	L	--	pelvis (ilium)	F	N	?
1	L	--	pelvis (ilium)	F	N	imm
1	L	--	pelvis (acetabulum and ischium)	F	N	?
1	R	--	pelvis (ilium)	F	C	?
1	R	--	pelvis (ilium)	F	N	?
1	R	--	pelvis (acetabulum and ischium)	F	N	?
1	L	dist	femur (shaft only)	F	N	imm
1	R	prox	femur (pathology - atrophy)	F	N	mat
1	R	dist	femur (shaft only)	F	N	imm
1	L	--	tibia (shaft only)	C	N	imm
3	R	prox	tibia (shaft only)	F	N	imm
1	R	dist	tibia	F	CT	mat
1	R	dist	tibia	F	N	mat
1	R	dist	tibia (cap only)	F	N	imm
1	L	--	patella	C	N	?
1	R	--	patella	C	N	?
1	L	--	metacarpal	C	N	mat
1	L	--	metatarsal	C	N	mat
1	R	prox	metatarsal	F	CT	?
1	R	prox	metatarsal	F	N	?
1	L	dist	metatarsal (shaft only)	F	N	imm
2	R	--	radial carpal	C	N	?

Excavation Unit N5E5/N5E6, Layer 6

Bos taurus (continued)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	L	--	intermediate carpal	C	N	?
2	R	--	intermediate carpal	C	N	?
1	R	--	ulnar carpal	C	N	?
3	L	--	4th carpal	C	N	?
1	R	--	4th carpal	C	N	?
1	L	--	astragalus	C	N	?
1	R	--	calcaneum	C	N	imm
1	R	--	calcaneum	C	N	?
1	R	--	fused central and 4th tarsals	C	CT	?
2	R	--	fused central and 4th tarsals	C	N	?
3	?	--	1st phalanx	C	N	mat
5	?	--	2nd phalanx	C	N	mat
6	?	--	3rd phalanx	C	N	mat

253

Bovidae (Bison bison/Bos taurus)

1	-	--	thoracic vertebra (spine only)	F	N	?
2	-	--	lumbar vertebra (disc only)	F	CT	imm
1	-	--	lumbar vertebra (disc only)	F	N	imm
1	L	dist	radius (shaft only)	F	N	imm
1	L	prox	ulna (cap only)	F	N	imm
1	R	--	pelvis (ilium)	F	CT	?
1	L	dist	femur (cap and shaft)	F	N	imm
1	?	dist	metapodial (condyle only)	F	N	imm
1	?	--	2nd phalanx	C	N	mat

10

Ovis aries (domestic sheep)

1	R	--	pelvis (acetabulum and ischium)	F	N	?
---	---	----	---------------------------------	---	---	---

Capra hircas (domestic goat)

1	R	--	skull (auditory bulla)	F	N	?
---	---	----	------------------------	---	---	---

Bovidae (Ovis/Capra)

1	L	--	pelvis (ilium)	F	N	?
1	R	--	pelvis (pubis), <u>female</u>	F	N	?
1	L	dist	femur (cap only)	F	N	imm

Excavation Unit N5E5/N5E6, Layer 6

Odocoileus virginianus (white-tailed deer)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	-	--	lower cervical vertebra	C	CT	mat
1	R	--	metacarpal (very small)	C	C	mat
1	?	--	1st phalanx	C	N	mat

Cervidae/Suidae (Odocoileus/Sus)

1	L	shaft	humerus	F	N	?
---	---	-------	---------	---	---	---

Artiodactyle (Bovidae/Cervidae/Suidae)

1	-	--	rib cartilage (ossified)	F	N	mat
1	R	--	pelvis (ilium)	F	N	?

Sus scrofa (domestic pig)

2	L	--	skull (parietal and frontal)	F	N	?
1	R	--	skull (parietal)	F	CT	?
1	R	--	skull (frontal)	F	CT	?
3	R	--	skull (frontal)	F	N	?
1	R	--	skull (frontal and nasal)	F	N	?
1	L	--	skull (squamosal)	F	N	?
1	L	--	skull (squamosal and auditory bulla)	F	N	?
1	L	--	skull (occipital condyle and paroccipital process)	F	N	?
1	L,F	--	skull (occipital condyles)	F	N	imm
1	L	--	skull (paroccipital process)	F	N	?
2	R	--	skull (jugal and zygoma)	F	N	?
1	R	--	skull (jugal, zygoma, lacrimal, and maxilla)	F	N	?
1	R	--	premaxilla (sockets I ¹ , I ²)	F	N	?
1	L	--	maxilla \underline{c} M ² -M ³	F	N	old
1	L	--	maxilla \underline{c} M ²	F	N	?
1	L	--	maxilla \underline{c} P ² -P ³ (socket P ¹)	F	N	imm
1	R	--	maxilla (sockets C ¹ , P ² , P ³)	F	N	mat
1	R	--	I ₁	C	N	mat
1	L	--	C ₁	C	N	mat
2	R	--	C ₁	C	N	mat
1	L	--	M ₁	C	N	mat

Excavation Unit N5E5/N5E6, Layer 6

Sus scrofa (continued)

No.	Side	Section	Description	C/F	Butch.	Maturity
1	R	--	M ³	C	N	mat
1	?	--	M ^x	F	N	mat
1	?	--	mandible	F	N	?
1	R	--	mandible c M ₁ -M ₂ (socket M ₃)	F	N	imm
1	R	--	mandible c M ₁ -M ₃	F	N	imm
1	R	--	I ₁	C	N	mat
1	L	--	I ₂	C	N	mat
1	L	--	C ₁ ²	C	N	mat
2	-	--	atlas	C	N	?
2	-	--	atlas	F	N	?
1	-	--	cervical vertebra	C	CT	imm
3	-	--	cervical vertebra	C	N	imm
1	-	--	cervical vertebra (body only)	F	N	imm
1	-	--	thoracic vertebra	C	N	imm
1	-	--	thoracic vertebra (body only)	F	N	mat
1	-	--	thoracic vertebra (body only)	F	N	imm
5	-	--	thoracic vertebra (spine only)	F	N	?
1	-	--	lumbar vertebra	C	CT	imm
4	-	--	lumbar vertebra	C	N	imm
1	-	--	lumbar vertebra (body only)	F	CT	imm
1	-	--	lumbar vertebra (body only)	F	N	imm
2	-	--	lumbar vertebra	F	N	mat
1	-	--	lumbar vertebra	F	CT	imm
1	-	--	lumbar vertebra	F	N	imm
2	-	--	lumbar vertebra	F	CT	?
5	-	--	sacral vertebra	F	N	imm
1	-	--	vertebra (body only)	F	CT	imm
1	-	--	rib, burned	F	N	?
1	-	--	sternebra	C	N	?
1	L	--	scapula (blade)	F	N	imm
1	R	--	scapula (blade)	F	N	?
1	R	--	scapula (acromion process)	F	N	?
2	L	dist	humerus	F	N	?
1	R	dist	humerus	F	CT	?
1	R	dist	humerus	F	N	?
1	R	dist	radius (shaft only)	F	N	imm
1	R	dist	radius (cap only)	F	N	imm
1	R	prox	ulna	F	C	mat
1	L	--	pelvis (ischium)	F	N	imm
1	L	--	pelvis (ischium)	F	N	?
1	L	--	pelvis (acetabulum, pubis, and ischium)	F	N	?
1	R	--	pelvis (ilium)	F	CT	?

Excavation Unit N5E5/N5E6, Layer 6

Sus scrofa (continued)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	R	--	pelvis (acetabulum and ilium)	F	CT	?
1	R	--	pelvis (acetabulum and ischium)	F	N	?
1	L	--	femur (shaft only)	C	N	imm
1	L	prox	femur (shaft only)	F	N	imm
1	L	prox	femur (cap only)	F	N	imm
1	R	prox	femur (shaft only)	F	C	imm
1	R	prox	femur (shaft only)	F	N	imm
1	R	prox	femur (cap only)	F	N	imm
1	L	dist	femur (shaft only)	F	N	imm
1	L	dist	femur (cap only)	F	N	imm
1	L	--	tibia (shaft only)	C	CT	young ad.
1	L	prox	tibia (shaft only)	F	N	imm
2	R	dist	tibia	F	N	mat
1	L	--	3rd metacarpal	C	N	mat
2	R	--	3rd metacarpal (missing condyle)	C	N	infant
1	R	prox	3rd metacarpal	F	N	?
2	L	--	4th metacarpal (missing condyle)	C	N	imm
1	L	prox	4th metacarpal	F	N	?
1	R	--	4th metacarpal	C	N	mat
1	R	--	4th metacarpal (missing condyle)	C	N	infant
1	L	--	3rd metatarsal	C	N	mat
1	L	prox	3rd metatarsal	F	N	?
1	R	--	4th metatarsal (missing condyle)	C	N	imm
1	?	--	2nd/5th metacarpal	C	N	mat
1	R	--	radial carpal	C	N	?
1	R	--	astragalus	C	N	?
1	L	--	calcaneum	C	N	imm
5	?	--	1st phalanx, digit 3/4	C	N	mat
3	?	--	1st phalanx, digit 3/4 (shaft)	C	N	infant
3	?	--	2nd phalanx, digit 3/4	C	N	mat
1	?	--	2nd phalanx, digit 3/4	C	N	imm
1	L	--	maxilla \underline{c} M ³	F	N	mat

129

Sciurus carolinensis (gray squirrel)

1	L	--	pelvis	C	N	mat
1	L	--	humerus	C	N	mat

Excavation Unit N5E5/N5E6, Layer 6

Meleagris gallopavo (wild or domestic turkey)

<u>No.</u>	<u>Side</u>	<u>Section</u>	<u>Description</u>	<u>C/F</u>	<u>Butch.</u>	<u>Maturity</u>
1	-	--	cervical vertebra	C	N	mat
1	R	prox	tibiotarsus	F	N	mat

Unidentified Bird

1	?	shaft	long bone, burned	F	N	?
1	?	shaft	long bone	F	N	?

Unidentified Fragments -- Large Mammal

1	?	--	skull (maxilla)		N	?
1	?	--	skull		CT	?
21	?	--	skull		N	?
1	-	--	lumbar vertebra (body only)		N	imm
1	-	--	lumbar vertebra (body only)		N	infant
1	-	--	lumbar vertebra (spine only)		N	?
1	-	--	lumbar vertebra (disc only)		N	imm
3	-	--	vertebra		N	imm
1	-	--	rib		N	mat
1	-	--	rib		N	imm
1	-	--	rib (complete)		N	infant
40	-	--	rib		N	?
3	?	--	scapula (blade)		N	?
1	?	--	scapula (blade)		N	imm
1	?	shaft	femur		CT	?
1	R	prox	tibia (shaft only), burned		N	imm
48	?	--	long bone		N	?
11	?	--	long bone		CT	?
1	?	--	long bone		grooved	?
3	?	--	long bone, burned		CT	?
2	?	--	long bone, burned		N	?
5	?	--	long bone (cap only)		N	imm
1	?	--	carpal element		F	?
7	-	--	---		CT	mat
5	-	--	---		CT	imm
51	-	--	---		N	imm
6	-	--	---		CT	?
245	-	--	---		N	?
3	-	--	---, burned		CT	?
4	-	--	---, burned		N	?

471

Unidentified Fragments

5	-	--	---		N	?
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An Archeological Investigation
of the Southwest Bastion

